AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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June.

"Amid his subjects safe,
Slumbers the monarch swain; his careless arm
Thrown round his head, on downy moss sustained,
Here laid his script, with wholesome viands filled;
There, listening every noise, his watchful dog,
Sight fly his slumbers, if perchance a flight
Of angry gad-flies fasten on the herd,
That startling scatters from the shallow brook,
In search of lavish stream.—THOMSON."

Of all months of the year, commend us to June for sight seeing and enjoyment. The poet's picture is in keeping with the month—the bank of a placid stream half guarded by woodland and half by meadow, the farmer taking his noonday rest, the herd, the dog, and the speckled trout that we only think of under the bank. Nature is never so fresh and beautiful as now; the leaves that have lingered so long in buds, have burst all their encasements and are expanded to their full size. How delicate and glossy they are! How rapidly the wood is making! You can almost see the process of growth. Beneath your feet, the grasses are springing in the greatest luxuriance, and some are already waving their little plumes and tassels in the air. The endless verdure is relieved by the blooming dandelions, and buttercups.

And the mouths for which Nature has made ready this abundant supply, are here to be filled. The peaceful kine are grazing quietly in the meadow. They stop a moment to stare at you with their large liquid eyes, but only a moment, for they go to grass without any bidding, and will not rest until their maw is filled, and the noon-tide heat drives them to shelter. They make music as they move on slowly in column, plucking the grass like a band of reapers. When chewing the cud in the shade, with half closed eyes, they make another familiar sound suggestive of the fullest animal content. It is an anodyne for fretted nerves, to see them thus tranquil.

Yonder, upon the distant hill-side, you see the flocks of sheep and the young cattle that do not need to be brought home at night. They are a beautiful sight, with their lambs which are now nearly large enough to be separated from their mothers. They are not the less beautiful in the eyes of the farmer that they are turning the grass into money with very little of his labor or supervision. It is one of the delights of June that the days are so clear that you can see distant objects with the greatest distinctness. The clouds are brought down to you, and the far off hills and mountains become your neighbors. But the creatures that help man are by no means confined to his domestic animals. Here in the orchard are a multitude of birds, robins, blue-birds, woodpeckers, sparrows, and wrens, all busy helping him. They make money without thinking of it. Watch that pair of robins as they tend their young. First the mother comes with earth worms or caterpillars that she has plucked from the apple-trees. The little birds know the sound of her wings, and their mouths open with a murmur of delight as soon as she alights upon the nest. The worms are dropped into their mouths. She is hardly gone before her mate comes with his bill full of insects and thus the whole day is spent in catering for their young. Hundreds of noxious insects are thus destroyed each day, by every family of robins. The appetite of the young for animal food is astonishing. There seems to be no limit to their capacity to devour, save the capacity of the birds to bring supplies. Where insects are abundant, the growth of the young is very rapid; in a few weeks from hatching they are on the wing, apparently as large as old birds.

But we have some insects that hide under the bark, and burrow in the wood, doing their mischief out of sight of human eyes. The woodpecker is the artist to attend to these sly depredators. Murder is said to be one of the fine arts. It is, in the hands, or rather in the bill of the woodpecker. He perches in the top of an old tree, with his buoyant chivalric song, bidding all his fortified enemies "Wake up, Wake up," as if he would not surprise them, or take any advantage of their somnolency. He is in no hurry for slaughter. He hops along the limbs, scans the underside closely where the holes are most likely to be found. He knocks gently on the limb near the premises of the grub as if he expected a cordial invitation to come in. He stops to listen as if he would find out whether his gentle knock has waked up any body. Possibly he hears a gnawing inside as if his neighbor was retreating at the back door. He works sharp now and the bill is driven into the decayed wood with strokes so rapid that you can not count them. The chips fly, and the artist waxes warm over his work. At length he strikes his enemy, and with his long bill drags him from his hole and bears him off in triumph to the knot-hole cabin that you see in yonder tree. His young family have a feast, and another of the farmer's enemies is disposed of.

Listen again: here is another sound in the orchard. The apple trees are full of blossoms, and almost as full of bees, and the murmur of their myriad wings falls on the ear with a soothing melody. Their legs are covered with the yellow dust, suggestive of the price of their luscious stores. All the air between the orchard and the hives is a busy highway for these little laborers. They preach industry to man while they fill their hives with honey. There is a charm in apple blossoms, and bee music is none the less pleasant to the farmer because they bring him money.

And now that we have taken it upon us to look up the humble helpers of the farm, we must say a good word in behalf of that much abused animal, the *Mephitis Americana.* You think at once of his bad name, of the eggs he has stolen, of the setting hens and turkeys he has broken up, of the roosts he has invaded, and the breezes he has polluted. Mr. Skunk is guilty of some misdemeanors, as all useful animals are. The cat catches your chickens, the dog runs mad and destroys man and beast with his virus, the horse runs away, smashes the carriage, and breaks your bones, the cow breaks down the shrubbery with her wicked horns, and the hogs get into the corn. They are all very good creatures in their place, not so good out of it. The same can be said of our hero. Possibly the hen-roost might have been made proof against vermin, and the fowls might have been confined to a yard—to your profit as well as to the safety of the eggs. If the eggs were out of place, the wandering animal whose instinct prompts him to eat eggs, wherever he finds them, is hardly so much to blame as the owner of the eggs. The eggs which you leave at loose ends are only a fair compensation for his services. All summer long he roams your pastures at night, picking up beetles and grubs, poking with his nose potato hills where many worms are at work. He is after the grubs, not the tubers. He takes possession of the apartments of the woodchuck, who has quartered himself and family upon your clover field or garden, and makes short work with all the domestic arrangements of that unmitigated nuisance. With this white backed sentinel around, you can grow clover in peace, and the young turnips will flourish. Your beans will not be prematurely snapped, and your garden sauce will be safe from other vermin. The most careless observation of his habits shows that he lives almost exclusively upon insects. While you sleep he is busy doing your work, helping to destroy your enemies. In any fair account kept with him the balance must be struck in his favor. Thus among the animals we often find friends under the most unpromising appearances, and badly abused men are not unfrequently the benefactors of society.

Calendar of Operations for June, 1862.

[A glance over notes like the following will generally call to mind some piece of work that would otherwise be forgotten or neglected. The remarks are more especially adapted to places between 35° to 45°; but will be equally applicable further North and South, by allowing for latitude.]

Farm.

Tillage is the great work of this month. If a man is skeptical of Jethro Tull's philosophy, he can dissipate his doubts by stirring the soil early and late. Cultivate, harrow, hoe, plow, and by all methods, stir and comminute the soil. This allows the air free access to all the surface particles, saves every drop of dew and rain, and puts the growing crops upon their best behavior. It subdues the weeds, exterminates foul seeds, and cleans the land for future crops. It is a substitute for manure, and at the same time makes the most of the manure that is put into the soil. From twenty to thirty per cent can be added to the corn crop by good frequent tillage alone. Just what the philosophy of this result is, perhaps none of us can tell. The fact is very well attested. Do all the tillage possible with the horse or mule. Hand hoeing is expensive. If corn is in row both ways, nearly all the work can be done with the cultivator. It is not yet too late to supply missing hills of corn.

Barley is better sown early, but is less injured by late sowing, than oats. It succeeds best on a deep gravelly loam, well worked and free from weeds. It properly follows corn or any hoed crop. Plow the land, then harrow to leave it level, and after sowing the seed harrow and bush. Sow three bushels to the acre. Some sow four bushels and claim that it pays.

Barns and Sheds should be put in order for the hay and grain crops which will soon be ready for harvest. Take time by the forelock, clean out all foul stuff from the bottom of bays and mows, and put the scaffolding in order. If hay is mixed with weeds and sorrel do not save the mow seed, as so many are in the habit of doing.

Barn Yards—Cover the bottom with muck or loam and plow or harrow the droppings into it once a mouth. If there is any bad odor about the yard you are losing money. Composting with the plow is cheap.

Beans—Plant early where corn has failed, and in soil wholly devoted to them. They do better on light land than most other crops, and are very profitable both for the family and for the market. Plant the best smaller varieties. There is a difference of one half in the price of the poorest and best field beans. Plant abundantly.

Beets—Mangel wurzel and sugar varieties sown early this month, will have plenty of time to mature for winter feeding. They save hay and grain, not only in feeding cattle, but pigs. Sugar beets make swine thrive, along in the early fall. Have a full supply for them.

Butter, if well made and packed during this month, will keep throughout the year. Cleanliness and thorough working are the two essential points to be observed. The milk room should be well ventilated, cool, and free from dust, insects, and offensive smells. Experiment to learn if this be true; note also the quality of the butter. In sending butter to market, have the cask or pail look neat and inviting, and plainly marked. New tubs should be well scalded with buttermilk and brine before packing, to remove the flavor of the wood.

Cabbages—Plant out for late crops. Hoe and cultivate between the rows of those previously set, *at least* once a week—the oftener the better. Set plants between the rows of early potatoes, which are to be dug about the first of July. Examine often to destroy cut worms and other insects. A farmer can not well have too many cabbages. They can be kept until May as well as a potato, and are cheap, succulent food for cattle, pigs, and poultry, all through the winter.

Carrots—Sow both as a general crop and as a succession to onions and early potatoes. The sooner they are sown the better. If the soil is deep and rich, sow fourteen inches apart for hand cultivation, twenty four inches for horse cultivation. They may be sowed between the rows, to succeed onions; leave every third space vacant to afford room for curing the onions when pulled.

Cheese—Try to improve the quality, rather than to increase the quantity. "White-oak" cheeses are always a drug in market, while those of first quality are always in demand at good prices. See communication on page 182.

Cattle—Young cattle, especially calves of the present season, need attention to keep them growing. Allow them the best pasture. Remember the first year of an animal is the most important. Good cows and oxen do not come from stinted calves. Keep them out of the road.

Corn—A good crop of the R. I. Premium, Canada Yellow, the true Dutton, or the King Philip, may be obtained, if planted during the first week of June. Indeed, most kinds of corn, (except the very large sorts which require a long season for maturing,) may be planted at this time. Some good farmers do all their planting as late as June 1st, soaking and tarring the seed, rolling in plaster, and manuring in the hill with compost manure, superphosphate, or Peruvian guano mixed with plenty of soil. Go through land already planted, with the cultivator and hoe, clear out all weeds and grass, thin the corn to four stalks in the hill, and replant missing hills. Sow and drill both the dent (tooth-shaped) and the sweet varieties for cutting green in August and September. In land troubled by moles, run the plow through both ways as soon as the corn is up, and as often as their runs are established.

Grain Fields will whiten to the harvest in southern localities. Wheat or rye should be cut as soon as the berry is advanced enough to bear moderate pressure of the thumb-nail, without breaking, or just after it leaves the "milk." Examine the fields for the earliest and best portions, to be left to ripen fully for seed. Save no grain for seed from weedy fields. Much of the profit as well as pleasure of farming depends upon clean seed, which makes clean fields.

Haying will begin in the early situations and well drained and manured fields. Cut grass or clover for hay, just as the bloom is passing away, and the seed commences to form. If left later, much of the nourishing part of the stalk is hardened into woody fiber. (See article on Hay Caps, page 173.) Hay Caps will enable you to cure much of the hay in the cock, which will give a better quality of fodder. Mowing machines and horse pitchforks will pay on all farms, where there is much grass to cut.

Manure—Turn every source to account, as recommended in previous numbers. Throw weeds from the garden, etc., into the pig sty, and supply the swine with plenty of material, to work over at their leisure. Deal largely in peat and muck, or loam and sods in their absence, during this month. Decomposition goes on rapidly in hot weather. Better pay double price for help than to have your yard and sheds bare. Manure is the sheet-anchor of good farming.

Millet is one of the best forage plants, well adapted to soiling. Sow any time this month, best before the middle.

Peas—Sow or plant at once. They make excellent food for swine, when fed green with the straw, or ripened and ground with oats, or when fed alone, cooked or soaked. Hogs will grow and fatten well on peas, but need corn to finish off upon.

Potatoes—Keep well hoed until blossoming. Hill moderately, or not at all. Top-dress with ashes and plaster.

Poultry—Compel them to lay in their appropriate places, by confining them in the poultry yard until after noon. Allow none to sit after the middle of this month. Cleanse and whitewash their apartments monthly, and use the fresh droppings mixed with plaster in the garden, and to make liquid manure.

Rutabagas and Rock turnips should be sown or transplanted from the 20th to the last of the month for field culture, if designed for cattle. Plant in drills two feet to thirty inches apart. Young plants of these varieties are as easily transplanted as a cabbage. They make a good succession crop to early potatoes. Manure with bone-dust, superphosphate, or Peruvian guano.

Sheep washing and shearing demands the attention of the farmer with the first settled warm weather. Read article in May *Agriculturist*. Mark each sheep plainly as soon as sheared, and designate ewes having superior fleeces, with a special mark, that they may be reserved for breeding. Dock and castrate lambs, if not already done, and guard against the fly by smearing wounds with tar. Look out for foot rot. See article on Labelling p. 173.

Sorghum—Drill or sow broadcast for cutting and feeding green, or to be cured for winter fodder.

Sugar beets and Mangels—Sow first week if possible or before the 20th, in mellow, rich ground; drills 2 feet to 30 inches apart, or the rows in pairs a foot apart and 3 feet between the pairs of rows—for convenience in cultivating. The plants should finally stand 8 inches apart.

Swine—Keep them growing with whey and milk from the dairy, mixed with ground feed. Give them the range of the orchard, to destroy grubs and worms in unsound fruit. A good clover pasture will afford them excellent feed. Give them plenty of pure water.

Tanners' Bark—Peel from hemlock and oak, as soon as it will "run" freely, and pile it when partially dry, so as to protect from rain.

Tobacco.—Prepare the ground for receiving the plants and transplant them, if possible, on some rainy day about the 15th, at any rate before the 25th. (See article on p. 168.

Tools, particularly for haying and harvesting, should all be in readiness before the season of use.

Weeds grow rapidly and soon produce seed, if left during this month. Thistles should be persistently cut with the spud below the surface. Linaria or Snapdragon may be *smothered* by sea-weed or swamp hay. Clean tillage *pays*.

Orchard and Nursery.

If the orchard has been well attented to in former years, it will require little care now. The catterpillar nests should be pulled down as fast as they appear. This can be done by running a pole with one end split into the nest, twisting it until it is completely torn from the branches. Select early morning or wet weather when the occupants are at home, to demolish their houses—and themselves.

The middle and latter part of June is a good time for the general pruning as heretofore advised. The wounds now made harden well, and the new wood immediately begins to cover them. Look to the young trees particularly, and see what shape they would assume, and whether the branches would be too crowded when fully grown if all the limbs are suffered to remain. An open head is particularly desirable, and to this end quite likely a portion of the inner cross branches will need cutting out with the pruning knife, and head them back if running up too strong, or some of the outer limbs are pushing out of symmetry. A vacancy on one side of the tree can soon be supplied by cutting the adjacent branches to buds upon the side to be filled. If the old orchard has been neglected and it is desirable to remove large branches, they should be taken off with a fine saw close to the body of the tree, or other limbs. It is also advisable to coat the sawed space with a solution of gum shellac, dissolved in alcohol to the consistence of thin molasses, putting it on with a painter's brush. By all means, spare time enough to give the orchard its annual pruning now—it will abundantly pay. After a little practice, a glance will tell what branches should be removed, to form a well balanced, tolerably compact head, with few inside crossing limbs. Two extremes should be avoided. One is, the cutting out of all the central shoots, and encouraging a tall or wide-spread growth. This leaves the bearing portions high in air, where they are swayed and thrashed by high winds, with a long distance for the fruit to fall; it is also inconvenient to pick. The branches are often so spread with the weights upon their extremities, as to split them down. Again, with the pear especially, there is not sufficient shade upon the main branches and body of the tree. The other extreme is, heading back too strongly, and not cutting out the center sufficiently. We have seen the branches so thick and interwoven, that it was almost impossible for fruit to grow, or to gather it.

Stimulate the growth of both old and young trees in a poor soil, by a liberal coating of manure about the roots. Remember that new wood and fruit spurs are wanted this year, to bear next season. Shortening-in in June checks the flow of sap, and tends to the formation of fruit buds. A stout cord or strap, fastened around the body of a young tree, or the main branches of older ones, tends to the same end, by compressing the sap vessels, though this is not generally advisable, except in the case of persistent non-bearing trees.

Look to the grafts set early in spring and renew the wax or clay where needed. Rub off the natural suckers.

The borer-moth will soon be at work, laying eggs about the base of the apple, pear, peach and quince trees. Keep everything clean about the trees that no protection be afforded either to the millers depositing the eggs, or to the eggs themselves. A newspaper tied around the tree, close to the ground, and for one foot or more above, will usually save the trees. If fearful that eggs are already there, wash the body with strong soap suds, or potash and water. The same wash will remove scale or "lice," which are now quite small, and easily rubbed off. See article on destroying insects on pages 181 and 177.

Evergreens may well be transplanted early in June. Besides attending to this in the nursery, let the newly planted and exposed orchard have a belt set upon the sides most affected by the prevailing winds, as advised last month. A mulch of straw, or fresh cut grass, spread about the roots of newly planted trees, will keep the ground moist in dry weather. A frequent application of *hoe* will serve a similar purpose. By no means allow a mat of grass or weeds to grow around young trees. The horse and hand hoe should also be kept at work in the nursery to lighten the soil and keep down weeds.

Kitchen and Fruit Garden.

The excellence of most table vegetables is in proportion to the *rapidity* of their growth. However, too great forcing sometimes throws the growth into tops and leaves rather than into the roots, but the two generally bear a close relation to each other, if the seed is good. There are a few general principles which every gardener should bear in mind. Do any hand weeding, but neither hoe nor stir the soil in wet weather. The drier the weather, the more beneficial is it to stir the surface, provided the rootlets be not touched. Liquid manure must be used with extreme caution in dry weather, and its effects are much more noticeable in showery times. Watering once commenced must be continued—watering the *plant* is of

little avail, but it is the *soil* which should be moistened all about the plant, and that too below the surface.

Asparagus may be injured by too long and too close cutting; when green peas and string beans come, let it grow. It should not be cut much after mid-summer, (June 20th)

Beans may be planted any time during the month, but it is desirable not to delay much after the first; even Limas will do well when planted the first week in June, if they have frequent hoeing and liquid manure.

Beets—Sow long blood, and blood turnip, in mellow soil before the 20th, for fall and winter use. A handy way to sow beets or mangels on a large scale is to make a wheel of a two inch plank and insert pins 6 inches apart, to mark inch-deep holes in rows; put two seeds in each hole and cover by hand. Thin and hoe as soon as the rows show.

Cabbages, Cauliflowers and all the family may be transplanted any time during the month, for Autumn use.

Carrots sown now will make a good crop.

Celery—Sow for winter crop, and prick out young plants to have a good supply of well grown stocky ones for transplanting in July. For fall crop, transplant about the middle or last of the month, in trenches 4 feet apart, a foot deep and well manured and mellow.

Corn—Continue to plant for succession, until July 4th; plant none but the sweetest. Hoe frequently.

Cucumbers, Melons, and Squashes—Put in cucumbers for pickles any time during this month. Remove gauze frames before the plants crowd them. Occasional watering with liquid manure, made by mixing fresh cow droppings, or hen manure with water, will repel insects, and rapidly forward the growth; dust with ashes and plaster or lime. The striped bugs may be easily taken early in the morning, while the dew is on, and destroyed. Examine the under side of the squash leaves for eggs of the squash bug; hundreds may be killed before hatching.

Egg Plants—Transplant into good soil abundantly enriched, best with horse manure; hoe and water frequently.

Insects—June is the month in which they do the garden most damage, and constant vigilance is the price of freedom from their depredations. Whale-oil soap, very dilute, and successive flocks of young chickens or turkeys, to be removed as soon as they begin to do any damage, are the best preventives.

Lettuce—Few varieties do well after mid-summer. The Tennisball and Curled Silesian grow as well as any. Sow or transplant into partial shade, and water frequently.

Onions—It is important to force a quick development, hence thin out seed onions to three or four inches and stir often. Potato onions (the best for the family table,) may be planted as late as the first week in June, eight to ten inches apart. For pickles sow rather thickly in poor soil.

Parsneps may be sown early this month; keep the surface mellow; they enjoy liquid manure.

Peas—Sow for late Summer use and for seed. They will not be troubled by bugs if sowed after mid-summer.

Potatoes—Late plantings often do very well, escaping rot when early ones suffer, but the reverse is oftener true.

Radishes—Sow spring varieties among other crops where they will be partially shaded. Winter varieties, (Black Spanish, Late Brown, etc.,) last of the month for use in August. Leave some of the early crop for seed—and for seed pods to be used for pickles.

Rhubarb—Cut up and dry or bottle a good supply for winter use. Let no seed stalks run up.

Tomatoes—Transplant for main crop; use a broad shingle or two to protect from the sun at first, and after a day or two, shift it so as to reflect the heat upon the plant. Hoe frequently, and pinch in some of the leading branches to give a bushy habit and earlier fruit. Hang the vines over poles slightly inclined, to keep the fruit from the ground and to give them air.

Turnips—Sprinkle with plaster when the dew is on to drive off the ground flea.

Weeds which come from seed are easily killed and there is no excuse for the gardener who allows them to be seen, any more than there is for a boy with a dirty face. Those from subterranean roots are more difficult to get rid of, but faithfulness will in time do the work.

Vacant Spots—No good gardener has any. There is almost always something which may profitably occupy them; if not, sow oats or rye, on even very small spots, and spade it in when you want to use the plot.

SMALL FRUITS.

Blackberries and Raspberries—Keep all canes, including new growth, properly tied to stakes or trellises. Allow only those new shoots to remain, which are wanted for next year's bearing, unless they are needed to make new plots. If specimens of large fruit are desired, thin the clusters and berries, leaving only one or two clusters on a cane, and water freely during dry spells.

Currants—Keep the bushes in good form by pinching in to short spurs: this will save the necessity of further pruning, except to remove dead wood. Keep the ground around them loose, and free from weeds. Water the bushes with soap suds, and other wash from the house. Pick the fruit for jelly as soon as ripe; for wine-making, now much practised, it is better fully matured.

Fruit Trees—Keep dwarf pears and other fruit trees trained to good shape, by pinching out superfluous shoots as they appear, and checking the production of much wood. Trees transplanted this year, or last fall, should not be allowed to mature any fruit unless their growth is very vigorous. If cherries can not be marketed, preserve them in bottles, or remove pits and dry them.

Gooseberries—Keep the surface of the ground moist by frequent stirring, mulching or loose stones.

Grapes—Proper care in pinching out unnecessary shoots, and shortening in too rampant growth, will obviate the necessity for severe cutting in the fall, and the strength of the vine will be retained in the remaining canes. Continue to watch against insects, and mildew. For the former, showering with whale oil soap, or other solutions, from the syringe or hydropult, will dislodge many. Others must be removed by hand; for mildew, dust with flowers of sulphur, freely.

Strawberries—Remove all grass and weeds, and mulch the ground with tan bark or short straw, before picking commences. Keep the beds well watered while fruit is forming, if there be dry weather.

Flower Garden and Lawn.

The earliest harvests of the year are gathered in the flower garden. The blossoming is to us fruition—and in June Nature's lap is full of flowers. Seed time still continues, many annuals may be sown. It is well to sow a little deeper than in May, and sometimes to lay a light board over the spot for a day or two, so as to keep the soil moist, but to remove it before the seeds begin to start much. Seeds of biennials may be sown at any time during this month or next, though with many kinds a tolerably long season, and vigorous growth the first season are essential to perfection of flowering the next.

There may be much taste exercised in the location of annuals and bedding plants, so that as they come successively into bloom, the garden may not appear bright and bare in spots, nor get mixed up blue and white and red and yellow, like the old fashioned style of "splashing" book edges—but so that there shall be a profusion of flowers grouped in masses all over it. A mass of bloom need not be large, but only enough to destroy the awkward, lonely effect of single flowers or spikes of the same kind, looking up here and there all over a garden, but each by itself. This remark is not applicable to the more independent and robust flowers like foxgloves, balsams or Dahlias, which often are very effective quite alone.

Bulbs—Spring blooming bulbs when they have passed the flowering, should stand a while in the ground; then be lifted, with so much earth only as adheres to the roots, and laid with their labels in empty flower pots under some cover where they will dry in the shade, and will not be wet by rains. When dry remove the tops, wrap in papers and keep dry until planting time in the Autumn.

Climbers of all kinds should be kept within bounds, and under good training. Their appearance is greatly improved by very little time occasionally given to them.

Dahlias should not be allowed to blossom too early; a little timely pinching in gives a much finer show of flowers late in the season when the weather is better adapted to them, and flowers are more double and last longer.

Evergreens—June is emphatically the month to transplant evergreens with best success. See article on p. 179.

Grass Edgings and Borders—Keep closely cut and trimmed always. If it burns in spots or looks ragged, water with liquid manure, and sift on a quarter of an inch in depth of fine loam.

Gravel Walks—First, plenty of gravel often raked; second, a good roller, often used; third, a shuffle hoe, to cut up weeds wherever they appear, are what will secure good walks. The weeds are left to dry and disappear on the surface, when not neglected, and grown too large.

Geraniums and Pelargoniums struck from cuttings in the open ground and which you intend to preserve, should be pinched-in freely, when they begin to grow rapidly, so that they may form compact, handsome, apple-tree-like tops, old plants require similar care or they will grow out of shape.

Hedges—Clip full grown hedges as often as they make growth enough. Evergreen hedges are best trimmed before they make their new growth. Young hedges must be pruned severely to force low branching. It is very easy to get top branches, but impossible to thicken up a neglected hedge near the ground, and such a hedge is neither ornamental nor useful.

Insects—Rose slugs, destroy with whale oil soap. The solution should be very dilute, and applied with a garden syringe and not a sprinkling water pot; they are on the underside of the leaves. This is also a defense against other insects. See *Insects* elsewhere in the Calendar.

Lawn—The grass of the lawn should be mowed just as often as a sharp scythe will cut *anything*. If you have water supplied in pipes from a head, by all means have a hydrant situated so that with a hose the grass may be often sprinkled. If moss comes in, after scarifying with a rake, a sifting of soil ¼ inch deep over the spot and a sprinkling of wood ashes, with a little salt, on the surface will probably destroy it.

Pinks and Carnations—As soon as they have done blooming, cut the main stalks back, and layer the side shoots. Cut back, whether you layer or not, for the flowers will be finer for it. Give seedlings plenty of room.

Potted plants require constant care and frequent watering; if the pots be sunk they require less, but must have water in dry weather.

Roses! Roses—Is there a family in this wide land with a rod of land attached to their dwelling, that has not a rose bush? Roses grow wild in almost every country, and by cultivation the number of varieties is rendered almost infinite. So numerous are they that the Horticulturist shrinks from enumerating even a few of the best sorts. The country gardens blush with them, and city corners and market places are redolent with their perfume. Severe cutting back after the bloom has nearly past, will secure on many varieties, particularly such as ordinarily bloom twice in the season, a full bloom again much sooner and fuller than otherwise. If roses depended upon for fall bloom are cut back to the sacrifice of their flowers at this season, they will blossom much earlier and finer for it. Keep climbers from whipping about in the wind, by binding them to the pillars or trellises. Prune all roses as soon as they have flowered, letting no seed remain except on those varieties of cluster roses like the Sweet briar on which the clusters of coral-colored hips are so ornamental.

Seed Stalks—As soon as the flowers are past, remove the stalk, unless seed is wanted, in which case tie it up, or mark it in some way so that it shall not be disturbed. A heedless person in the garden may destroy some very choice seed if it be not protected in some such way.

Transplanting—As a general rule, transplant in wet days. If the plant can be moved with some earth, water the soil after it is set out, but if the roots are bare, add water at the time of setting out, so as to cause the soil to settle about the roots. Protect well from the sun.

Verbenas need to be watched and pinned down so as to cover the whole bed allotted to them as speedily as possible. Ladies' hair-pins are excellent for this purpose. If the flower heads are all pinched off before they blossom it will greatly expedite this, and as soon as the bed is covered, it will burst into a sheet of bloom.

Green and Hot-Houses.

Most of the occupants of these houses do best in the open grounds. Some of the tropical plants, and others which it is desirable to multiply as fast as possible, are still retained under glass. Cuttings strike more readily inside, where moisture and shade are regulated at will. The remaining plants require an abundance of air, and should be watered frequently. It is now time to make provision for a stock of Winter blooming plants. Unless cuttings are put in soon, the plants will not have sufficient age and vigor to flower freely. A good supply of materials for potting soil should also be collected. Such compost or mixture is better after laying several months.

Camellias do well in the open border in partial shade. If retained on the shelves in the house, water and syringe often. Watch for and check the approach of insects. Cut back to a bushy well formed head.

Composts and Potting Soil—Composts make faster and better in the heat of Summer than at any other time. Prepare rich compost of wood mold and fine manure, with a little garden soil, with any other desirable enrichment and work it over frequently. Before use it must be largely diluted with additions of pure peaty soil or wood mold, with lime and sand, and a shovelful of ashes and gypsum to the bushel. Have a good supply of properly prepared potting soil at all times in readiness.

Cuttings of Chrysanthemums, Myrtles, Hydrangeas, Fuchsias, Geraniums, etc., intended for blooming next season, may be made and potted.

Geraniums are in full flower, and should be watered freely. Insert cuttings and make layers to increase the stock of desirable kinds.

Potting—Many of the rapidly growing plants will now require more room, and must be transferred to larger pots.

Seedlings of sufficient size should be transplanted either to small pots or set in the open borders.

Water—Give as may be wanted. A little may be necessary night and morning upon plants in small pots in a dry atmosphere, too much endangers damping off.

Grapery and Orchard-House.

In cold graperies, thin the clusters of superfluous berries, and support the shoulders if necessary by tying to the cane or wires above. Cut off the bearing branches two or three leaves beyond the cluster and stop the laterals when they start successively, leaving one leaf only. Maintain abundant moisture up to the time that the fruit begins to color. Grapes in early houses will be ripening; watch against mildew on all—and dust with sulphur. Withhold sprinkling overhead when the clusters begin to color, and maintain a drier atmosphere. Whitewash, or otherwise shade the glass if there is danger of sun scorching, and give free ventilation.

Peaches and other house fruit, after a judicious thinning out last month, will simply require Summer pruning or pinching-in, to prevent too great a growth of foliage and to mature the next season's bearing wood.

Apiary in June.

Prepared by M. Quinby—by request.

More swarms will issue in this month, than in all the others of the season. A few stocks will send out a swarm before being crowded, or even full of bees. Others will be full, and a large part of the colony crowded outside for weeks before issuing, and sometimes remain in this way throughout the season. When an increase of colonies to the fullest extent allowable, is desired, there is hardly a season so poor for honey, that such stock may not be made to furnish one swarm at least, but they must be attended to in season, and a swarm *forced* out. An artificial swarm when established early, will do equally well with those issuing naturally. With the movable comb-hive an artificial swarm is made as readily as any way, by the process given last month for preparing colonies for Italian queens. All there is about it, is to divide, and examine afterward to see that each has a queen. It would be well to rear a few queens in the way given, (if you do not have the Italians) and introduce them, without making it necessary for the colony to rear one. The gain in the time of breeding will pay for trouble, beside the satisfaction of understanding a little of very curious natural history. It has been ascertained that a queen bee will lay from one to three thousand eggs in twenty four hours. It follows, that in the two weeks at the lowest rate, she would deposit 14,000 eggs, which a good colony would mature—enough for a tolerable swarm. It is not safe to divide the second time, unless the season for honey proves to be extraordinarily good. Artificial swarms are not so readily made with the box hive, yet it can be done. Have the hive to receive the new swarm, the same size and color of the old one. Turn the full one bottom up, set the other over it, stop all holes, arouse the bees by striking the lower hive with a stick or hammer, a few times lightly: leave them quite five minutes, when the beating may be continued up to twenty minutes if necessary to get two-thirds out. You can now raise and look under the hive without any danger of stings. If the queen is with the new colony, they will be quiet after fifteen or twenty minutes; if not, they run uneasily about. When there is not room to set the two hives on each side of the stand as directed in May, the old one may be set in front of the other, moving either a little to equalize the bees as required.

Between two and three weeks after the first swarm, a stock is more liable to become queenless than at any other season; and after such swarms as are accompanied by young queens—in from one to five days. The loss may generally be known the next morning, and sometimes at evening, by their uneasy movements. It is important in such case, to give them a mature queen, or at best a cell containing a queen. They would probably rear one if brood was given them, but it would take about six weeks to get a queen and her brood ready to hatch; by this time the colony would be very much reduced.

The surplus boxes should now receive attention. As fast as the hives become full of bees, the boxes should be added. The new swarms may have them immediately, when very large, or when two good swarms have united. Take off, and replace with empty ones as fast as filled, fasten in the top of each box before using, strips of straight, clean white comb, to secure regularity.

To keep the Italians pure, two methods have been recommended. One is to isolate as far as possible from all others. It is found that they will mix at a distance of two or three miles. It is necessary to have a colony or more that will furnish pure drones, to stand near the young queens to be impregnated. These, when native drones are in the way at home, must be removed to a distant yard. The stock that you breed the queens from, may be at home—unless it should be the only one to furnish drones—as well as the boxes for rearing the queens, until the queens hatch, when they should be taken to the yards where the Italian drones are. Let them stand about eight days, or until the queen begins to lay. She may now be introduced, and the box and bees may be used to rear another queen. Although a dark colored queen *may* raise light colored bees, it is quite apt to be otherwise, and I suggest that such be not used for breeding.

Another method of changing an apiary to the Italians, where there are a large number of bees, may be on the whole less trouble. Thus: take no pains to isolate, but rear the queens (from pure Italian brood) at home, and let them mix with the native drones. These will produce *pure drones*, but mixed workers. Introduce such a queen into all the stocks, the next season, perhaps before; if done soon, *all* the drones will be Italians. Now raise another set of queens from the pure one, and they will quite certainly meet the Italian drones, and after all their produce will be pure. One queen will furnish eggs enough to rear five hundred or a thousand queens in one season.

Errata.—In Apiary for May instead of "set over cover *two* boxes," read "set over cover *to* boxes."

Containing a great variety of Items, including many good Hints and Suggestions which we give in small type and condensed form for want of space elsewhere.

Crowded Over.—50 "Basket Items," in type.

Notes to Crop Reporters.—(1.) We are sorry to learn that, *by the delay of the mails*, the BLANK FORMS did not reach several persons in due time. They should have arrived on or soon after May 1st. This perhaps explains why many made no return in season for the present paper. If any one whose name is sent in has failed to get a copy of the blank forms, please let us know promptly. We have stereotype plates to print all required. Extra copies can be supplied to Farmers' Clubs, or others needing them.——(2.) Please make up the reports as near to the 10th day of each month as possible, and mail so as to have them reach this office *on or before the 15th, without fail.*——(3.) Only the crops largely cultivated in any county need reporting in columns **W** and **X**. The main object is, to get at the amount and prospects of the leading crops which are to affect the market prices.——(4.) Further inquiry and investigation may lead to a different estimate for columns **B, C, E, F, H, I, etc.**; please fill them up anew *each* month.——(5.) The State, County and name, should always be filled in at the head of the blanks. The omission of this in three reports, compelled us to leave them out.——(6.) We have assigned a *Register Number* to each name, as will be seen in the tables, page 186. It will greatly assist us in compiling and comparing the tables, if each reporter whose number is given, will mark his own register number plainly on the left of *each* monthly report.——(7.) Letter Postage is required for the blanks written on. Though this is a public enterprise, from which we can derive no special pecuniary benefit, while it involves hundreds of dollars, in expense and time, in preparing blanks, collecting the returns, etc., we shall quite cheerfully bear all the cost, and those sending the reports may deduct postage (15 cents,) from their next subscription account. We would inclose the stamps in a letter but this would require extra labor, and additional outlay for postage. We trust those who take the trouble to collect and forward the reports will find abundant satisfaction in their labors, by the usefulness to the country at large as well as to themselves, of these reliable statistics. If such information were collected by the Government, as it ought to be, an appropriation of twenty or thirty thousand dollars would doubtless be required to gather no more useful reports than those we shall give.

The Strawberry Show.—In anticipation of a fine show of this delicious fruit, which so charmingly hand in hand with the rose, introduces the season of fruits and flowers, we again invite all who are interested in Strawberries, and their culture, to visit the office of the *Agriculturist* on the 20th and 21st of this month (June). Persons intending to exhibit are referred to the announcement of the show on page 192, in which a slight change has been made. We should have a few days notice of the number of samples we may expect from the principal exhibitors, in order to provide for all, and hope this suggestion may be complied with. The results of this exhibition will, we hope, prove by careful weighing and measuring single berries and quarts, that a decided advance in strawberry culture has been made, and that in this, America may offer a challenge to the world.

Strawberry Premiums are again offered for August, at which season, plants of new growth will be vigorous, and ready for transportation by mail or otherwise. See particulars on page 192.

Fruit of Sorghum Seed.—We are getting returns in various ways from our distribution of this seed five or six years ago, and now by mail receive a sample of excellent and beautiful, light colored sugar from C. Cory, of Lima, Ind., whose interest in the culture of the sorghum is widely known. Mr. Cory received the 2d and 3d premiums at the Sorghum Convention in Adrian, Mich., in April, and is the inventor of one of the approved evaporators now claimants for public favor. His interest in this subject dates from the reception of the seed distributed from the *Agriculturist* office.

South-down Sheep.—Mr. Taylor, of Holmdel, N. J., has exhibited no little enterprise in his efforts to introduce improved sheep into our country, and we hope his Show and Sale, advertised in this paper, will attract the general attention it deserves.

Humbugs.—The reader should set it down as a general rule that those unknown dealers who offer the most certain cures, and the largest amount of gold, silver, precious stones, books, pictures, engravings, and what not, for the least money, and who tell the most plausible story, are in nine cases out of ten those who give the least return for money invested with them, if, indeed, they make any return at all. Poor, worthless copies of engravings with high-sounding names, can be got up at trifling cost. Any one having a business that will pay a high salary "and found," can hire plenty of persons at his very doors to take the situations offered. A very large number of persons who have written to us, and who may hereafter make inquiries after this and that splendid money-making scheme advertised, will please consider the above as an individual answer. When they inquire about a good thing, we will try to respond; but in this matter, silence must *not* be construed into approval.

The Bureau of Agriculture referred to last month, has received the sanction of both Houses of Congress, and the President. The new Department is to be under the almost absolute control of a "Commissioner of Agriculture," nominated by the President and confirmed by the Senate. With a right kind of a man at its head, great good might result. We fear, however, that our worthy President is too much engrossed with other cares to give the subject due consideration, and that, as report indicates, he may nominate for the office a man without suitable qualifications. The fact that Watts was a good gardener at the White-House, did not prove him fit to be a "Brigadier General;" nor will the fact that any man is a good florist, or a successful wheat grower, or an excellent dairyman, be a guarantee that he can look after and foster the general and varied agricultural interests of our country. We repeat, emphatically, what we stated last month, viz., that only an energetic man, of the highest order of intellectual and administrative ability, should be appointed to the station of Commissioner of Agriculture, in this, the greatest agricultural country of the world.

Large Farms for $10 Each.—Newspaper advertisements and circulars, without number, have for years past announced "homesteads" and "farms" for from $1 to $50 each—a plot or, a lottery chance for a plot 20x100 *feet* in some village to be about to be, or a little larger area in some man-avoided place, away out West. This humbugry is all done away with now. Uncle Sam has stepped in and generously offers **80 to 160 Acres** of his great farm to every head of a family—male or female—who is a loyal citizen, native or foreign born. The only conditions are, that the recipient pay in $10 to meet the expenses of the survey, etc., and go upon and occupy the land for a period of at least five years—in other words, make it his or her *homestead.* Minors, who have served at least fourteen days as volunteer soldiers, can choose a farm of any unoccupied lands belonging to the Government. Of land sold at $1.25 per acre, 160 acres are open for free entry; of those now valued at $2 50 per acre, only 80 acres can be chosen. We will publish the Law in full, in the July *Agriculturist:* it was signed by the President at too late an hour for us to crowd it into this number, already over-full.

The Dog Show at Barnum's.—There has just closed at the American Museum in New-York, a very interesting exhibition of dogs. "The Prince of Showmen," offered very liberal prizes—from $1000 for the largest and handsomest dog, down to 2d and 3d premiums for the best dogs of various pure breeds, both useful and ornamental. An immense Siberian bloodhound took the $1000; but to enumerate the others which for great beauty, and grace, or for faithfulness, sagacity, power, and ferocity even, gained the admiration of thousands of visitors daily, is beyond our power, for lack of space. Exhibitors may not in all cases have coincided with the Committees who made the awards, but the public was gratified, and Mr. Barnum's reputation has not suffered.

Apropos.—Mr. B., has announced a Baby show which promises to amuse the public as much as did the former one. An 8 months old, 1¼ lbs. baby, will be there.

Noticing Advertisements.—Twenty or thirty of our advertising patrons have requested editorial reference to their business notices, and we would cheerfully do so in some cases; but that would be unjust to others, and we must treat all alike, by advising our readers to look at all—for as a whole they embody a vast deal of information, important to almost every body.

Vest-Pocket Lexicon, by Jabez Jenkins, is a condensed Dictionary, 2¾ by 3 inches, ⅝ inch thick, containing about 20,000 words, mainly those not familiar to everybody, including scientific and technical terms. The explanations of the words are rather too brief to be fully satisfactory, but on the whole, the book is a convenient *vade-mecum*, easily carried in the vest-pocket. Price, according to style of binding, 53 to 75 cents, sent by mail.

Summer Vines for Verandas and Arbors.—Of those which it is not too late now (June 1st) to plant, and which can be got in small pots at the Florists, we name the following: *Ipomea Learii*—This is a dark, rich blue convolvulus, with flowers larger than the common Morning Glory, growing 15 or 20 feet high. *Cobea Scandens*—Very rapid grower, 15 to 50 feet high, and has large, purplish, bell-shaped blossoms. *Lophospermums*—Two sorts, pink and pale purple, same hight as preceding. *Maurandias*—Three kinds, pink, purple, and white, 10 feet high, very desirable. Great bloomers.

Flowers.—(D. T. of Clinton, N. Y.) The extra fine specimens of Balsams and Asters which you saw at the Fair, were produced in this way: The plants were set 18 inches apart, the side shoots were kept pinched in, and the whole vigor of the plant thrown into a few blooms at the top. The balsam seed used was *several years old.*

Barren Flower Beds.—"Elsie." Yours is not an uncommon case. Your plants having stood so many years in the same ground, have become overgrown, and have nearly exhausted the fertility of the land. The ground is damp, heavy, pasty, and nothing seems to grow naturally in it. Now, give the beds a thorough overhauling. Dig out a part of the old soil and bring in new from the kitchen garden. Then work in a little old manure, and leaf-mold and sand. In setting out the plants afresh, divide the roots and set out only the youngest part of the root. If there are any over-hanging trees, not valuable, down with them; their shade and the action of their roots will spoil any garden.

New Drummond's Phlox.—"Sophy." One of the newest and best is the *Radowitzii*, the flowers being rose colored with white stripes running from center to margin of each petal. It blooms early and profusely, like the old sorts.

Origin of the Delaware Grape.—"W. D." of Morristown, N. J., thinks this a useless inquiry. We beg leave to differ. It is of interest as a matter of intelligence to know the origin of all fine fruits, of all good breeds of cattle, of all useful inventions. The origin of many of our finest fruits was without human intervention. But others have been secured by the skill of man, through planting seeds, and hybridizing. If we knew more of the circumstances attending the origin of chance fruits, it would help us very much in our efforts to originate new varieties.

Mice Gnawed Grape Vines.—(Edw'd Smith.) Laying down grape vines in the Fall was very well, but covering them with straw was not wise, at least for your locality. Next Fall, simply lay upon the canes a few bits of board, or even poles to keep them down close to the ground: of all *coverings* earth is best.

Strawberries—Comparative merits of the staminate and pistillate varieties. "Mrs. E. A. L." The information you desire has been given in past numbers. See basket for May. Any of the varieties indicated there are good enough for field culture. The Wilson's Albany, a staminate, bears more abundantly than any pistillate we have ever tried, but with us the plants are not so enduring as some others; and the fruit, though large and fine, is too acid for our liking. We prefer a little less of the fruit of the Triomphe de Gand, while the plants of this latter do well with us.

Unfruitful Gooseberries.—S. T. Wheeler, Kosciusko Co., Ind. Prune freely in the Fall, cutting out old wood and shortening in the new. An old bush may be cut back one half to advantage. If still inclined to wood without fruiting, pinch in the summer growth.

Training Blackberries and Gooseberries.—"W. K." Beaufort, S. C. The New-Rochelle blackberry should be set in rows about eight feet apart, and four feet in the row. It may be trained to wires on posts or tied to stakes. It should be shortened in at the top and about a third taken from the side branches. Gooseberries should be thinned.

Grafting the Hickory Nut.—W. Minton, Morris Co., N. J. The shagbark can easily be grafted upon the common pig nut, early in Spring, and it is stated also, and we know no reason to discredit it, that whip grafting succeeds with green shoots while growing vigourously, say in July or August, shading the grafts.

Gas tar on Apple Trees.—D. P. Judson, of Fairfield Co., Conn., having 50 very thrifty 4-year-old apple trees, painted them with a coat of coal tar to prevent girdling by mice, as recommended in an agricultural paper. In the course of the Summer suckers were thrown up most abundantly and a swelling of the bark above the tar was noticed as if a powerful stricture had been applied. The tar was at once removed, but its effects were long visible. In the case of one tree the bark drew off nearly all around.

Crown Grafting.—J. D. Douglas, of New London Co., Conn., says he much prefers crown grafting—that is, inserting the cions between the bark and wood—to any other method. He has practiced it for 15 years with entire success, using only a fine saw, sharp knife, and a steel probe to part the bark from the wood. He thinks cions are more likely to grow, and the wounds to heal sooner. Mr. D. uses cement made of 4 lbs. rosin, 1 lb. beeswax, and ½ pint linseed oil, melted together.

Honey Locust Seed.—C. E. Wood. This seed is covered with a thick tough skin and sprouts sooner for scalding, but grows without. Most seeds of evergreens sprout readily, but need a screen or shade for the first season after they come up. Nurserymen plant them in open cold frames and shelter them with a lattice frame made of laths, which diminishes the sunlight.

Weeping Willows.—"J. G. I." Try a "cutting," as large as your arm or no larger than a goose quill—10 feet long or 10 inches; set it in any soil but a blowing sand, a moist loam is best, and it will strike at almost any season of the year when the frost is out of the ground, though early Spring is the best time.

Grasses for Minnesota.—"J. G." of Rosemount, wishes to know the best kinds for that State. Probably the varieties that flourish at the north generally, would do equally well there. Herdsgrass or Timothy is one of the best for hay, but does not last long in pasture. White and red clover, red top and furze, fowl meadow, and Kentucky blue grass make good pasture. A variety is better than any one kind. The only cultivation grass needs is the sowing of seed, when the land is laid down with spring grain. Top dressings are of service when the yield begins to diminish; no kind of manure comes amiss.

Alfalfa.—"L. B." of New Russia, N. Y. Lucerne is called by this name in Buenos Ayres. In some respects it is better than red clover. It sends its roots deeper into the subsoil and for this reason withstands drouth better. It grows very quick after it is cut, yielding several crops in a season, in soil adapted to it. It does not succeed well in thin soils, or in those of a compact subsoil. It is not much raised at the north and experiments are needed to show if it will flourish. We advise no one in the latitude of our correspondent to attempt it, except as an experiment.

Prairie Grass for Hay.—"A. D. C." of Ind., wishes to know if this hay is merchantable. Any thing that has value will sell. Whether it will pay to send this hay to market, depends upon his location. In some places it will not pay to market corn. If the hay makes good fodder where it is grown, it will be good fodder, and command some price in any market.

A Package of Oats—The White Poland.—Mr. J. V. M. Wyckoff, of Somerset Co., N. J., informs us that four years ago he received through the Seed Distribution of the *American Agriculturist*, one of the ounce parcels of White Poland Oats. These he sowed in drills in a blackberry garden. The hens destroyed about half of the yield; the rest was sown in a field the next season and yielded 24 quarts. These yielded 20 bushels the next year, which were scattered through the neighborhood and yielded largely. The present year every bushel that could be obtained was in great demand for seed, at a much higher price per bushel than any other kind. Thirty pounds are reckoned as a bushel, but they weigh fully 80 lbs. to the sack of 2½ bushels. They continue to yield well and weigh heavy, and Mr. Wyckoff says they are esteemed a very great improvement. So much for the history of a single free parcel of seeds—a similar history belongs to tens of thousands of parcels of different kinds of seeds sent free from the *Agriculturist* office, to every part of the land, during a few years past.

Large Yield of Wheat.—J. W. Joseph, Portage Co., Wis., writes that he sowed 1¼ quarts of Golden Trape wheat, on a piece of land 10 rods long and 11 feet wide, from which he harvested 2 bushels and 12 quarts of fine wheat. A very large yield, being 'at the rate' of 57 bushels per acre.—What is its quality, and season?

Cabbages—Corn for Soiling.—"S. W. R." Perrymansville, Md., writes us, that, in his experience, cabbages produce more feed than Rutabagas, sugar beets or carrots, with less trouble to raise, less to prepare for the cattle, and making quite as much and as good milk. On this matter we are willing he should speak for himself. He also writes, that corn, sown broadcast and cut green, produces more soiling feed to the acre, than oats, barley, wheat or southern peas (which his cattle will not eat) and whatever is left in the field is excellent for winter feed, if cut and cured seasonably, all which is true. The value of the corn plant can not be overstated.

Beans in a Rotation.—They come in properly before wheat. They of course make some draft upon the soil, but not so great as a grain crop.

Sugar Beet Culture in Ohio.—Prof. F. A. Mott, of Columbus, O., succeeded in manufacturing a fair sugar from the beet, and estimates that 16 tuns of beets can be raised upon an acre, capable of producing 6,000 lbs. of sugar, and 600 gallons of syrup. Calling the syrup worth 40c. per gallon, and the sugar 6c. per lb., the product is $600 per acre. Prof. Mott plants 10 acres this spring, with seed imported from France. The above we gather from the report of Secretary Klippart of the Ohio State Board of Agriculture.

Syrup from Sugar Beets.—"P. H." of Brighton, Michigan, wishes to know the process of making syrup from beets. There is no simple and cheap process adapted to the farm; a large factory is required for working profitably. It is much better to get syrup from the sorghum which is easily raised on new lands.

Large Increase of Potatoes.—W. Beckwith, Johnson Co., Kansas, says he cut one bushel of Black Mercer potatoes into pieces of two eyes each, planted them on ¾ acre of poor soil, and harvested 90 bushels large potatoes. [Rather thin seeding—only 1½ bushels of potatoes to the acre?—Ed.]

Mixing Potatoes.—We can get new varieties of potatoes only from the seed. The tubers of different varieties will not change, even if planted together

Draining keeps the Land Moist.—"S. K." of Dayton, O., wishes to know how this is effected. The soil is made more porous by drains. The air from the surface follows the water as it sinks into the drains, and diffuses itself through the soil, parting with its moisture as it comes in contact with the cooler particles of soil. As the air is constantly changing, the soil is always receiving moisture in the dryest time.

Canada Thistles.—This plant is propagated partly by seed, and partly by the spreading roots. The perpendicular root is not the true root: *that* is a horizontal stem shooting out, right and left, from the base of the perpendicular stem, a foot or more below the surface. But if this upright stem be perseveringly cut off at the top of the ground, the whole root will gradually die out. The wonder is often expressed, that the uncounted millions of seeds grown each year do not spread this pest faster than they do. They would do so, if a multitude of the seeds were not abortive, and if still others were not destroyed by a grub which eats into the flower at its base. A merciful Providence, surely.

Seeds in the Manure Heap will be destroyed if the fermentation is complete in all parts of the heap, and continues long enough. But this seldom happens. If the weeds are dry, it is a much safer process to burn them. If green they will help the fermentation of the heap and perish.

The Italian Bee.—Urgent calls are made for information upon this insect, by "T. B. W." and many others. All who have them to sell, mixed, or pure, of course, affirm their great superiority. But Jonathan remembers that this is an age of humbugs, and wants other testimony. He shall have it in due time. Those who are best prepared to give an opinion would not like to publish it yet. It is thought by some of these gentlemen that this bee will make twenty five per cent more honey than the common variety. The Italian bee has not yet been long enough upon trial in this country to ascertain this fact, if it be one. As the pomologists would say, it is on the list promising well. We will hope for good things from it. So far the main effort has been to multiply queens.

Peach Tree Borer.—"T. B. R." Henry Co., Ind., says: "I have tried planting tansy around my trees, for two years past, and not a single tree has been attacked by the borer, while those without tansy have almost all been more or less injured. I have seen it tried four years on other trees with entire success. The tansy is planted very close to the tree, and so as to surround it. It need not be allowed to spread but a few inches from the tree."—Strong scented herbs are offensive to most in-

sects. Fruit growers have much to learn and to gain in studying their instincts, but it is said that after a while they get used to tansy, and worse things.

Centipedes.—The worms sent us from Baldwinsville, by "L. S. P." are centipedes. He states that they are very abundant in the gardens in that region, destroying strawberry plants, pink roots, tomatoes and even potatoes and apples. One of the best remedies for insects is an application of coarse salt at the rate of about six bushels to the acre. We have also had occasion to notice that insects disappear from the ground that is highly manured and deeply worked. We suggest trenching, spade and manure.

The Cut Worm in Corn Ground.—"J. T. R.," of New-Guilford, Pa., recommends elder bushes one or two feet long, scattered over the field, a rod and a half apart when the corn comes up. The worms seek shelter under the bushes, and are attacked by ants and killed. He has seen half a pint of worms under a single bush. The remedy is easily tried.

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Long Toes in Sheep.—One of the causes is confinement in the yard or sheds during the Winter. They usually wear them off in the pasture during Summer, especially in gravelly rough land.

Hoven in Cattle.—This is occasioned by eating excessively of green succulent food, usually after being kept on hay and dry food. "The gas generated in the stomach swells the animal, and sometimes causes death. The knife should never be resorted to. If a stout rope of straw, as thick as your wrist, be made, and forced into the mouth, and the ends tied behind the horns, it will afford relief. The animal being turned loose in attempting to get rid of the straw raises the neck and head in such a position as to let the gas out. The passing down of a tube by one who understands the anatomy of the throat will also relieve the animal. But the straw seldom fails, and any one can apply it." (So says a subscriber.)

Horse Refusing Hay.—"A Young Farmer," says of his horse ten years old, that he is unable to swallow hay after he has chewed it, while he eats other provender well. He keeps thin though in good spirits.——The eschewing or throwing out of the food from the mouth after mastication, no doubt, arises from the state of the Molar or double teeth. Examine the mouth of the horse, and if the teeth are found rough and ragged, they must be rasped smooth, with a proper tooth rasp.

How many Pounds of Milk to a Pound of Cheese.—"O. B. P." of Potsdam, N. Y. gives the following account of his experience to determine this question, beginning May 15th, ending Oct. 20th, 1861. All cheese made prior to Sept. 20th, was shipped Nov. 12th, the remainder Nov. 26th. The night's milk was set 3 to 5 inches deep in tub and pans. In the morning it was skimmed, the cream being made into butter (7 pounds to 100 pounds of cheese,) and the morning's milk added. Cheeses made in May required 11 pounds of milk for one pound cured cheese; those made in October 9¼ pounds, the average of the season being 10 pounds. Cheeses made in May required 9 pounds of milk to one pound of green cheese; those made in October 8⅛ pounds, the average of the season being 9 pounds. September 30th, he made cheese in the proportion of 8¾ pounds of milk to one pound of cheese when 60 days old, and he estimates the shrinkage on 100 pounds of green cheese made in May at 17 pounds, and that made in October at 7⅛ pounds, to the 100 lbs. the average shrinkage being 11 lbs. in the 100.

To Expedite Crops.—In certain backward seasons and localities, the corn crop, root crops, and vegetables in the garden, need a little stimulus. For the corn crop, manure may be applied in the hill. Or if the corn is up, and looks yellow and stunted, use at the first hoeing a tablespoonful of guano, or superphosphate, or a handful of plaster and ashes, to a hill, distributing it evenly in the soil. But special reliance must be placed upon the cultivator and hoe. Both in garden and field, the weeds must not be allowed to gain any headway. In the garden, kitchen slops, or other liquid manure may be used, once or twice a week, according to their strength.

Hen Manure on Corn.—"J. R. T." of Otego, wishes to know the best way to use it. It contains a good deal of ammonia, and should not come in contact with wood ashes. It may be mixed with three times its bulk of plaster, and eight or ten times its bulk of muck, peat, or garden mold, and be used in the hill or for a top dressing after the corn is started, a handful to the hill. The compost should lie a few days under cover before it is used. It is very valuable for all field and garden crops.

Lime on "Pound" (Yard) Manure.—A subscriber to the *Agriculturist*, spread his manure last fall on land intended for corn, and then covered the entire field with slaked lime, and asks our view of the operation. The danger was great that through the influence of a mild rain or the natural moisture of the manure the lime would act upon it and disengage the ammonia which it does very readily, and this most valuable ingredient would be lost. A heavy fall of snow might have saved it—or prolonged rains—but we utterly condemn the practice. Lime and unleached ashes should never come in contact with ammoniacal manure.

How much Leached Ashes to the Acre.—"G. B. H." of Galt, C. West, asks this question. There is little danger of using *leached* ashes in excess. It is a manure that lasts longer than most others, showing its effects for a dozen years or more. Ten or fifteen two-horse loads to the acre will make a good dressing.

Rogers & Gest's Fertilizer Overestimated.—We have received the following comunication from Dr. Pugh, Pres. of the Pennsylvania Agricultural College:....."Certain analyses of manures made in our College Laboratory were published in the May number of the *Agriculturist*, and the selling price and the correct calculated value of each given. One of them, styled "Rogers & Gest's Ammoniated Superphosphate." Though the specimen sent to me as such, proved to be, as the analysis showed, nearly pure Sulphate of Ammonia, the calculated value of which was $75.80 per ton, while the selling price of the manure it purported to be was $45.00. Several persons wrote to ascertain where they could get Rogers & Gest's manure. I cautioned them all against the danger that the specimen which we analyzed was not a correct specimen of that sold as Rogers & Gest's Ammoniated Superphosphate and assured them that they would only be safe in purchasing on a legal guarantee that the manure contained what we found in it, and wrote also to Messrs. Rogers & Gest asking if they could supply us mannre of the standard we had received at $45.00 per tun. They sent me a 10 lb. sample for examination which I found to be a very different article from that first examined as the following analysis shows:

Phosphoric acid soluble in water	4.49	p. ct., at 12½c.	p. lb	$0.56
Phosphoric acid insoluble "	5.75	" " 4½c.	"	.25
Sulphuric acid	21.38	" " 1c.	"	.21
Nitrogen	1.43	" " 17c.	"	.24
Potash	1.23	" " 4c.	"	.04
Calculated value per hundred pounds				$ 1.30
" " " tun				26.00
Selling price per tun				45.00
Loss per tun to the farmer in its sale				19.00

I am sorry that an error committed some where (though not by us) has led to the association of so high a price with so poor a manure. In conclusion the farmer is reminded that the principle upon which these manures are calculated is not dependent upon any theory as to the agricultural value of the elements of manures. The price given to *each element* is simply that at which it can be purchased in the market. When we say that insoluble phosphoric acid, as in bones, is worth 4¼ cents per pound, we mean that this is its market price when free from adulteration, etc. In conclusion I can only urge upon the farmers the necessity of refusing to purchase any of the costly fertilizers without a *guarantee* as to what they contain; and finally if American dealers refuse their guaranty it would be better to import manures from England, from whence at least the superphosphates could be bought and sold on legal guarantee in New-York and Philadelphia at prices as low as those we have used in calculating the value of American manures." E. PUGH.

Agricultural College of Penn., May 3d, 1862.

Home-made Hand Harrow for Root Crops.—A convenient, home-made implement for running between the rows of beets, carrots, turnips, etc., is formed by driving spikes through a plank of any desired width, to be drawn or pushed between the rows. Round up the forward end, attach a handle, and load with weights if needful. Run this implement between the rows weekly and there will be little left for the hand-hoe.

Agricultural Fun.—A waggish friend out West writes us that "the best way to make farmers grow

Madder, is to *poke* 'em with sharp sticks !"—A novel connection between *Phytolacca* and *Rubia*.

Currant Wine.—There is always a market for it in this city. The price depends upon quality. There are men who make a business of disposing of all such products of the farm and garden, who would sell it probably to better advantage than the producer.

Cotton in Caraccas.—Mr. J. E. Willet, an extensive planter of New Granada, assures us that he produced last season 2,500 pounds of cotton of excellent fiber upon two acres of land, at a cost not exceeding $25 for cultivation. The world will furnish cotton somewhere.

Making Wines.—Messrs. Clark, Selden, and others, Onondaga Co., N. Y., wish instruction about making wines. Strawberry, currant, gooseberry and raspberry wines and cordials are made after different recipes, scarcely any two people following the same. They vary from 1 quart pure juice to 3 quarts water; from 1 pound of sugar to the gallon, to 3 or even 4 pounds, and of course the wines vary from very mild wine-like beverages to sweet, strong cordials. A very satisfactory currant wine is made by using half water, half pure juice, with 2 pounds of white sugar to the gallon. After the juice is expressed from fully ripe well mashed fruit, let it come to the air as little as possible, add the water and sugar together, and put it in a *perfectly* cleansed barrel or other large close vessel, the larger the better, in a cool cellar, filling within an inch or two of the bunghole, over which lay a cloth, until the fermentation has nearly passed. Preserve in a keg or domijohn, similarly treated, enough to fill the barrel full, when the fermentation has nearly ceased, at which time (after 1 month) it may be bunged up, leaving only a small vent at the bung. It may be bottled in October, or stand a year or two on the lees.

Preserving Eggs.—C. N. Bement, in an article in the Genesee Farmer, says that eggs for preservation should be removed from the nest daily, and laid down as fresh as possible. A good way is to pack them, small end down, in stone jars, and pour on strong lime water in which two handfuls of salt to four gallons of the lime-water are dissolved. Keep in a cool, dry situation.

Good Keeping Pumpkins.—We have now (May 15th,) on our Exhibition tables, a large pine apple pumpkin (60 lbs.) raised in Monmouth Co., N. J., last season and presented to us in Autumn by Mr. S. B. Conover, of Washington Market. The pumpkin is perfectly sound, and would apparently keep much longer, but we wish to plant the seeds, as they can not be found at seed-stores. A pumpkin of this kind proved excellent when made into pies earlier in the season.

Destroying Moles and Gophers.—J. Kearns, of San Andreas, Cal., rids his grounds of these destructive pests, by sinking tin cans (lard cans 3 to 6 inches square, and 10 inches deep,) below their burrows. Once in they can not get out, and he has taken 6 to 8 at a single haul. It is advisable to put small pieces of turnips or other vegetables in the cans to attract the gophers, and after the can or earthen pot has been sunk even, the run should be cleaned out and a board or stone laid over the top, a little above the track to shut out light, covering the whole with earth. Mr. K. also poisons them by burying in their runs potatoes in which strychnine is inserted.

Squash Bugs, (writes "J. B. S.", Hilsboro' Co., N. H.,) will crawl on cool nights under pieces of board laid upon the ground among the vines, where they may be found and killed in the morning.

Scale on Apple Trees.—W. Gutteridge: Your trees are covered with 'bark lice' or 'scale', as the twig sent abundantly testifies. The trees will be greatly injured if not killed, unless the insects are destroyed. Make a strong soap suds, with 1 pint of soft soap to 2 quarts water; or 1 lb. potash to 1 gallon of water, and wash the affected parts thoroughly in May or June with a scrubbing brush and the liquid. Illustrations and full directions were given in Dec., 1857.

The "Stuyvesant Pear Tree."—This noted tree, 200 years old, standing at the corner of Third Avenue and Thirteenth Street, this City, we found putting forth its blossoms on the 6th of May, or 12 days later than last year.

Agricultural College of Pennsylvania—Change of Name.—This institution was at first chartered as the "Farmers' High School of Pennsylvania." The requisite legal steps having been taken, the Trustees at a meeting on May 6th, changed the name to that of the "Agricultural College of Pennsylvania," the latter name better representing its character and associating it more directly with similar institutions.

Flower Show of the Brooklyn Horticultural Society.—Lovers of flowers enjoy a great treat, once a year, at the Spring show of this flourishing Society. This year the exhibition was very well sustained in the departments of rare and beautiful exotics. Beautiful leaved plants were in profusion from the magnificent *Cyanophyllum*, 8 feet high, with leaves thirty inches long and 10 wide, to the beautiful *Sonerilla*, of which we gave a picture in the last *Agriculturist*. The show of Orchids was excellent; of *Daphne cneorum*, there were some noble plants; and Azaleas in great perfection, made the room glow with their many tints. There was a most instructive show of Ferns, which was particularly rich in those of variegated foliage. There was a Mocha coffee tree in fruit, and Palms in variety: Roses, Pelargoniums, and many very rare and more common green-house plants, with hanging baskets, moss baskets, Wardian cases, etc., made it one of the finest exhibitions we have ever had on this Continent.

Information Wanted About Bees.—"J. W. H." Hartford Co., Conn. Langstroth on the Honey-Bee, is clear and practical in its instructions, (price $1.25.) Quinby's Mysteries of Bee-Beeping, also a good, common sense book, (price $1.) Both should be perused by those studying the nature and habits of the bee, and either will be a safe guide.

Massachusetts Agriculture.—The Annual volume containing the report of the Secretary of the Board of Agriculture, with reports and valuable statistics, is received from the Secretary, Mr. Flint. It contains a very interesting account of the native Mammalia of the State, and their relations to agriculture, from Mr. E. A. Samuels, who has had charge of this department of the State collections, which, including all branches of Natural History, are now under the charge of the Board of Agriculture. The reports of Dr. Loring, chairman of the committee on cattle breeding and feeding; of Mr. R. S. Fay, on the protection of sheep and against dogs; of Mr. J. S. Grennell, chairman of the committee on the wastes of the farm, are very valuable contributions to agricultural literature. We can not express too highly our appreciation of the successful efforts of the Mass. Board of Agriculture, and of Mr. Flint, in particular, under whose auspices during the past year not only the volume before us, but the excellent edition of "Harris' Insects," and the "Manual of Agriculture" have been given to the public.

Country Houses.—We have frequent inquiries in regard to plans for building country houses. Our friends who purpose building will do well to consult Cottage Residences and Cottage Grounds, by Downing. (Price $2.) It is full of practical, good hints.

Wool Growing States—Sheep Book.—"What State is best adapted to wool growing?" "A Subscriber" of this City is the inquirer, and to him and others we must say we can not tell. Sheep will do well every where, in every State and Territory in this broad land from the Aroostook to the Sacramento; and from the Gulf to the great Lakes, on the plains of Texas, Kansas and Colorado, wool can be more cheaply produced than anywhere else. Distance from market, is the disadvantage which the producer has to contend against, and the actual profits of wool raising in Vermont, Pennsylvania, Ohio and Michigan, depend so much upon the care the flocks receive, that it is impossible to tell where with a given capital the most money can be made, which in the view of the farmer is the measure of the adaptedness of any district to wool growing. Randal & Youatt on sheep, bound together under the title of "Shepherd's own Book," (price $2.00) is a book to be recommended.

New Book on Grape Culture.—Just as we go to press, C. M. Saxton places upon our table an attractive work on the Garden and Vineyard culture of the Grape, by John Phin. It is very fully illustrated with new engravings, and is intended to supply a great want. We are pleased with it in the main, so far as we have investigated its merits, but of course, before a thorough perusal, must withhold special commendation. In typographical execution, it leaves nothing to be desired in a book of 375 pages and more than 100 engravings, which costs but $1.00. It may be obtained at this office by mail or otherwise.

Prison Life at Richmond.—We have received and perused with great interest, the stirring narrative of Lieut. W. C. Harris, of Baker's California Reg't. who was taken prisoner at Balls Bluff. It appears to have been written in all truth and soberness, and must exalt the patriotism, and warm the sympathies of all who read it. The sketches were written in the famous Tobacco Warehouse, and brought here sewed into the lining of an overcoat. The book is an 8 vo. of 175 pages. Published by G. W. Childs, Philadelphia. Price $1.

Poultry Book.—Fowls are not only very useful and a source of great agricultural profit, but of great beauty, and their intelligent culture is fraught with interest. To poultry fanciers, we can hardly recommend a book more certain to give satisfaction than Bement's American Poulterer's Companion, one of the starred books on our list. Price $1.25.

Chinese Sugar Cane.

The Journal of the Illinois Agricultural Society publishes a prize article on the culture of Sorghum, and its manufacture into syrup and sugar, by E. F. Newberry, from which we extract and condense the following:

The richest soil gives the largest growth of cane, but not the sweetest, and the syrup will rarely grain. Mr. N. found that cane from the post-oak flats, and from the red clay soil near the timber was much superior in richness to that from the black mold of the prairies. Sorghum proved superior to the Imphee, and to keep it pure, it should be planted at least a quarter of a mile distant from broom-corn or "chocolate corn." Seed should be gathered from the earliest patches, should be fully ripe, and only the upper half of each head be planted, as that portion produces the most vigorous canes.

The time of planting varies with the season, but it may safely be put in a week or two before corn. A piece planted the first of March was frozen in for nearly a month, but yielded a good crop of cane, which made a superior quality of light colored syrup. Fall plowing is advisable, repeating it in Spring, and harrowing thoroughly. With abundance of land and scant labor it is better to cultivate in hills 3 feet apart in 4 feet rows. Soak the seed in warm water for 12 to 16 hours and then bury in sacks in the earth until it sprouts. Roll in dry plaster or ashes if it sticks together. Drop 10 to 15 seeds in a place and cover one inch or less. When one inch high, go through with a harrow having the front tooth removed so that the harrow may go *over* to each row, and follow with the hoe. Continue to harrow, or use the cultivator and tend like Indian Corn, thinning to 5 or 8 stalks per hill when 4 inches high.

Six to ten days before cutting strip off the leaves. This causes the cane to ripen quicker and gives a richer juice. A quick blow with a long wooden knife will strip it rapidly. Do not top the cane until it is fully ripe; then take off the two upper joints with the seed head—and at the same time cut up the cane. There is very little juice in the top of the stalks, and that of poor quality, and incapable of crystalizing.

Cut the cane as soon as the seed is well ripened, and grind as fast as possible. The uncrushed canes may be kept for months if protected from frost by covering or housing, while even a slight freezing, especially before cutting, will give the syrup a bitter, smoky flavor. The grinding mill should be very strong, with two, or better, three rollers—upright if driven by horse power. Let the juice run from the mill through a wire sieve into the barrel or vat. Cook's evaporator is recommended, and a rapid ebullition, using the skimmer, is the best method of clarifying. Boil down three-fourths in the evaporator, and finish in a large shallow oblong pan over a brick or stone arch, into which it is poured through a strainer. Keep up a brisk heat under the finishing pan, until the syrup bubbles like mush, emitting little jets of steam. It is then run into the cooler in a finished state.

To make sugar, reject the upper half of the stalk and boil rapidly, as soon as the juice is pressed out. Pour the thick syrup into large shallow pans or coolers, and stir briskly until cool enough to bear the finger. If it does not begin to grain in a day or two, place in a room heated to 80° or 90°, in open barrels with the lower end bored and plugged in several places. The barrels should stand on blocks so that the plugs can be drawn to let the molasses drain off when the contents have sufficiently granulated.

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An Egg within an Egg.—This is rather rare, but not unheard of among "fast hens". It indicates good breeding and rather high living. Your egg is a whopper, about seven by ten.

Sick Hens.—"J. R. K." Phenix, R. I., writes of his fowls, that they have a noisy breathing, terminating in a rattling in the throat. The head about the eyes swells. There are discharges from the nostrils, at first thin, and in five or six days thick. They sneeze and make a quirring noise.——The disease is the Roup. Roup is caused by the presence of numerous thread worms in the wind-pipe, which are said to be generated in the blood, principally at times when a want of iron is noticed in that fluid. Remedy.—Soak barley in spirits of turpentine, giving a few grains every morning with some pills composed of 1 drachm of sulphate of iron, and 9 tablespoonfuls of flour. Preventive.—Give the hens a clean house and freedom, with green food and meat or insects.

Long Toes in Sheep.—One of the causes is confinement in the yard or sheds during the Winter. They usually wear them off in the pasture during Summer, especially in gravelly rough land.

Hoven in Cattle.—This is occasioned by eating excessively of green succulent food, usually after being kept on hay and dry food. "The gas generated in the stomach swells the animal, and sometimes causes death. The knife should never be resorted to. If a stout rope of straw, as thick as your wrist, be made, and forced into the mouth, and the ends tied behind the horns, it will afford relief. The animal being turned loose in attempting to get rid of the straw raises the neck and head in such a position as to let the gas out. The passing down of a tube by one who understands the anatomy of the throat will also relieve the animal. But the straw seldom fails, and any one can apply it." (So says a subscriber.)

Horse Refusing Hay.—"A Young Farmer," says of his horse ten years old, that he is unable to swallow hay after he has chewed it, while he eats other provender well. He keeps thin though in good spirits.——The eschewing or throwing out of the food from the mouth after mastication, no doubt, arises from the state of the Molar or double teeth. Examine the mouth of the horse, and if the teeth are found rough and ragged, they must be rasped smooth, with a proper tooth rasp.

How many Pounds of Milk to a Pound of Cheese.—"O. B. P." of Potsdam, N. Y., gives the following account of his experience to determine this question, beginning May 15th, ending Oct. 20th, 1861. All cheese made prior to Sept. 20th, was shipped Nov. 12th, the remainder Nov. 26th. The night's milk was set 3 to 5 inches deep in tub and pans. In the morning it was skimmed, the cream being made into butter (7 pounds to 100 pounds of cheese,) and the morning's milk added. Cheeses made in May required 11 pounds of milk for one pound cured cheese; those made in October 9¼ pounds, the average of the season being 10 pounds. Cheeses made in May required 9 pounds of milk to one pound of green cheese; those made in October 8¼ pounds, the average of the season being 9 pounds. September 30th, he made cheese in the proportion of 8¼ pounds of milk to one pound of cheese when 60 days old, and he estimates the shrinkage on 100 pounds of green cheese made in May at 17 pounds, and that made in October at 7½ pounds, to the 100 lbs. the average shrinkage being 11 lbs. in the 100.

To Expedite Crops.—In certain backward seasons and localities, the corn crop, root crops, and vegetables in the garden, need a little stimulus. For the corn crop, manure may be applied in the hill. Or if the corn is up, and looks yellow and stunted, use at the first hoeing a tablespoonful of guano, or superphosphate, or a handful of plaster and ashes, to a hill, distributing it evenly in the soil. But special reliance must be placed upon the cultivator and hoe. Both in garden and field, the weeds must not be allowed to gain any headway. In the garden, kitchen slops, or other liquid manure may be used, once or twice a week, according to their strength.

Hen Manure on Corn.—"J. R. T." of Otego, wishes to know the best way to use it. It contains a good deal of ammonia, and should not come in contact with wood ashes. It may be mixed with three times its bulk of plaster, and eight or ten times its bulk of muck, peat, or garden mold, and be used in the hill or for a top dressing after the corn is started, a handful to the hill. The compost should lie a few days under cover before it is used. It is very valuable for all field and garden crops.

Lime on "Pound" (Yard) Manure.—A subscriber to the *Agriculturist*, spread his manure last fall on land intended for corn, and then covered the entire field with slaked lime, and asks our view of the operation. The danger was great that through the influence of a mild rain or the natural moisture of the manure the lime would act upon it and disengage the ammonia which it does very readily, and this most valuable ingredient would be lost. A heavy fall of snow might have saved it—or prolonged rains—but we utterly condemn the practice. Lime and unleached ashes should never come in contact with ammoniacal manure.

How much Leached Ashes to the Acre.—"G. B. H." of Galt, C. West, asks this question. There is little danger of using *leached* ashes in excess. It is a manure that lasts longer than most others, showing its effects for a dozen years or more. Ten or fifteen two-horse loads to the acre will make a good dressing.

Rogers & Gest's Fertilizer Overestimated.—We have received the following communication from Dr. Pugh, Pres. of the Pennsylvania Agricultural College:....."Certain analyses of manures made in our College Laboratory were published in the May number of the *Agriculturist*, and the selling price and the correct calculated value of each given. One of them, styled "Rogers & Gest's Ammoniated Superphosphate." Though the specimen sent to me as such, proved to be, as the analysis showed, nearly pure Sulphate of Ammonia, the calculated value of which was $75.80 per ton, while the selling price of the manure it purported to be was $45.00. Several persons wrote to ascertain where they could get Rogers & Gest's manure. I cautioned them all against the danger that the specimen which we analyzed was not a correct specimen of that sold as Rogers & Gest's Ammoniated Superphosphate and assured them that they would only be safe in purchasing on a legal guarantee that the manure contained what we found in it, and wrote also to Messrs. Rogers & Gest asking if they could supply us manure of the standard we had received at $45.00 per ton. They sent me a 10 lb. sample for examination which I found to be a very different article from that first examined as the following analysis shows:

Phosphoric acid soluble in water	4.49	p. ct., at 12½c.	p. lb	$0.56
Phosphoric acid insoluble "	5.75	" " 4½c.	"	.25
Sulphuric acid	21.38	" " 1c.	"	.21
Nitrogen	1.48	" " 17c.	"	.24
Potash	1.29	" " 4c.	"	.04
Calculated value per hundred pounds				$ 1.30
" " " ton				26.00
Selling price per ton				45.00
Loss per ton to the farmer in its sale				19.00

I am sorry that an error committed some where (though not by us) has led to the association of so high a price with so poor a manure. In conclusion the farmer is reminded that the principle upon which these manures are calculated is not dependent upon any theory as to the agricultural value of the elements of manures. The price given to *each element* is simply that at which it can be purchased in the market. When we say that insoluble phosphoric acid, as in bones, is worth 4½ cents per pound, we mean that this is its market price when free from adulteration, etc. In conclusion I can only urge upon the farmers the necessity of refusing to purchase any of the costly fertilisers without a *guarantee* as to what they contain; and finally if American dealers refuse their guaranty it would be better to import manures from England, from whence at least the superphosphates could be bought and sold on legal guarantee in New-York and Philadelphia at prices as low as those we have used in calculating the value of American manures." E. PUGH.

Agricultural College of Penn., May 3d, 1862.

Home-made Hand Harrow for Root Crops.—A convenient, home-made implement for running between the rows of beets, carrots, turnips, etc., is formed by driving spikes through a plank of any desired width, to be drawn or pushed between the rows. Round up the forward end, attach a handle, and load with weights if needful. Run this implement between the rows weekly and there will be little left for the hand-hoe.

Agricultural Fun.—A waggish friend out West writes us that "the best way to make farmers grow

Madder, is to *poke* 'em with sharp sticks"!—A novel connection between *Phytolacca* and *Rubia*.

Currant Wine.—There is always a market for it in this city. The price depends upon quality. There are men who make a business of disposing of all such products of the farm and garden, who would sell it probably to better advantage than the producer.

Cotton in Carnecas.—Mr. J. E. Willet, an extensive planter of New Granada, assures us that he produced last season 2,500 pounds of cotton of excellent fiber upon two acres of land, at a cost not exceeding $95 for cultivation. The world will furnish cotton somewhere.

Making Wines.—Messrs. Clark, Selden, and others, Onondaga Co., N. Y., wish instruction about making wines. Strawberry, currant, gooseberry and raspberry wines and cordials are made after different recipes, scarcely any two people following the same. They vary from 1 quart pure juice to 3 quarts water; from 1 pound of sugar to the gallon, to 3 or even 4 pounds, and of course the wines vary from very mild wine-like beverages to sweet, strong cordials. A very satisfactory currant wine is made by using half water, half pure juice, with 2 pounds of white sugar to the gallon. After the juice is expressed from fully ripe well mashed fruit, let it come to the air as little as possible, add the water and sugar together, and put it in a *perfectly* cleansed barrel or other large close vessel, the larger the better, in a cool cellar, filling within an inch or two of the bunghole, over which lay a cloth, until the fermentation has nearly passed. Preserve in a keg or demijohn, similarly treated, enough to fill the barrel full, when the fermentation has nearly ceased, at which time (after 1 month) it may be bunged up, leaving only a small vent at the bung. It may be bottled in October, or stand a year or two on the lees.

Preserving Eggs.—C. N. Bement, in an article in the Genesee Farmer, says that eggs for preservation should be removed from the nest daily, and laid down as fresh as possible. A good way is to pack them, small end down, in stone jars, and pour on strong lime water in which two handfuls of salt to four gallons of the lime-water are dissolved. Keep in a cool, dry situation.

Good Keeping Pumpkins.—We have now (May 15th,) on our Exhibition tables, a large pine apple pumpkin (60 lbs.) raised in Monmouth Co., N. J., last season and presented to us in Autumn by Mr. S. B. Conover, of Washington Market. The pumpkin is perfectly sound, and would apparently keep much longer, but we wish to plant the seeds, as they can not be found at seed-stores. A pumpkin of this kind proved excellent when made into pies earlier in the season.

Destroying Moles and Gophers.—J. Kearns, of San Andreas, Cal., rids his grounds of these destructive pests, by sinking tin cans (lard cans 3 to 6 inches square, and 10 inches deep,) below their burrows. Once in they can not get out, and he has taken 6 to 8 at a single haul. It is advisable to put small pieces of turnips or other vegetables in the cans to attract the gophers, and after the can or earthen pot has been sunk even, the run should be cleaned out and a board or stone laid over the top, a little above the track to shut out light, covering the whole with earth. Mr. K. also poisons them by burying in their runs potatoes in which strychnine is inserted.

Squash Bugs, (writes "J. B. S.", Hilsboro' Co., N. H.,) will crawl on cool nights under pieces of board laid upon the ground among the vines, where they may be found and killed in the morning.

Scale on Apple Trees.—W. Gutteridge: Your trees are covered with 'bark lice' or 'scale', as the twig sent abundantly testifies. The trees will be greatly injured if not killed, unless the insects are destroyed. Make a strong soap suds, with 1 pint of soft soap to 2 quarts water; or 1 lb. potash to 1 gallon of water, and wash the affected parts thoroughly in May or June with a scrubbing brush and the liquid. Illustrations and full directions were given in Dec., 1857.

The "Stuyvesant Pear Tree."—This noted tree, 200 years old, standing at the corner of Third Avenue and Thirteenth Street, this City, we found putting forth its blossoms on the 6th of May, or 12 days later than last year.

Agricultural College of Pennsylvania—Change of Name.—This institution was at first chartered as the "Farmers' High School of Pennsylvania." The requisite legal steps having been taken, the Trustees at a meeting on May 6th, changed the name to that of the "Agricultural College of Pennsylvania," the latter name better representing its character and associating it more directly with similar institutions.

Flower Show of the Brooklyn Horticultural Society.—Lovers of flowers enjoy a great treat, once a year, at the Spring show of this flourishing Society. This year the exhibition was very well sustained in the departments of rare and beautiful exotics. Beautiful leaved plants were in profusion from the magnificent *Cyanophyllum*, 8 feet high, with leaves thirty inches long and 10 wide, to the beautiful *Sonerilla*, of which we gave a picture in the last *Agriculturist*. The show of Orchids was excellent; of *Daphne cneorum*, there were some noble plants; and Azaleas in great perfection, made the room glow with their many tints. There was a most instructive show of Ferns, which was particularly rich in those of variegated foliage. There was a Mocha coffee tree in fruit, and Palms in variety; Roses, Pelargoniums, and many very rare and more common green-house plants, with hanging baskets, moss baskets, Wardian cases, etc., made it one of the finest exhibitions we have ever had on this Continent.

Information Wanted About Bees.—"J. W. H." Hartford Co., Conn. Langstroth on the Honey-Bee, is clear and practical in its instructions, (price $1.25.) Quinby's Mysteries of Bee-Keeping, also a good, common sense book, (price $1.) Both should be perused by those studying the nature and habits of the bee, and either will be a safe guide.

Massachusetts Agriculture.—The Annual volume containing the report of the Secretary of the Board of Agriculture, with reports and valuable statistics, is received from the Secretary, Mr. Flint. It contains a very interesting account of the native Mammalia of the State, and their relations to agriculture, from Mr. E. A. Samuels, who has had charge of this department of the State collections, which, including all branches of Natural History, are now under the charge of the Board of Agriculture. The reports of Dr. Loring, chairman of the committee on cattle breeding and feeding; of Mr. R. S. Fay, on the protection of sheep and against dogs; of Mr. J. S. Grennell, chairman of the committee on the wastes of the farm, are very valuable contributions to agricultural literature. We can not express too highly our appreciation of the successful efforts of the Mass. Board of Agriculture, and of Mr. Flint, in particular, under whose auspices during the past year not only the volume before us, but the excellent edition of "Harris' Insects," and the "Manual of Agriculture" have been given to the public.

Country Houses.—We have frequent inquiries in regard to plans for building country houses. Our friends who purpose building will do well to consult Cottage Residences and Cottage Grounds, by Downing. (Price $2.) It is full of practical, good hints.

Wool Growing States—Sheep Book.—"What State is best adapted to wool growing?" "A Subscriber" of this City is the inquirer, and to him and others we must say we can not tell. Sheep will do well every where, in every State and Territory in this broad land from the Aroostook to the Sacramento; and from the Gulf to the great Lakes, on the plains of Texas, Kansas and Colorado, wool can be more cheaply produced than anywhere else. Distance from market, is the disadvantage which the producer has to contend against, and the actual profits of wool raising in Vermont, Pennsylvania, Ohio and Michigan, depend so much upon the care the flocks receive, that it is impossible to tell where with a given capital the most money can be made, which in the view of the farmer is the measure of the adaptedness of any district to wool growing. Randal & Youatt on sheep, bound together under the title of "Shepherd's own Book," (price $2.00) is a book to be recommended.

New Book on Grape Culture.—Just as we go to press, C. M. Saxton places upon our table an attractive work on the Garden and Vineyard culture of the Grape, by John Phin. It is very fully illustrated with new engravings, and is intended to supply a great want. We are pleased with it in the main, so far as we have investigated its merits, but of course, before a thorough perusal, must withhold special commendation. In typographical execution, it leaves nothing to be desired in a book of 375 pages and more than 100 engravings, which costs but $1.00. It may be obtained at this office by mail or otherwise.

Prison Life at Richmond.—We have received and perused with great interest, the stirring narrative of Lieut. W. C. Harris, of Baker's California Reg't, who was taken prisoner at Balls Bluff. It appears to have been written in all truth and soberness, and must exalt the patriotism, and warm the sympathies of all who read it. The sketches were written in the famous Tobacco Warehouse, and brought here sewed into the lining of an overcoat. The book is an 8 vo. of 175 pages. Published by G. W. Childs, Philadelphia. Price $1.

Poultry Book.—Fowls are not only very useful and a source of great agricultural profit, but of great beauty, and their intelligent culture is fraught with interest. To poultry fanciers, we can hardly recommend a book more certain to give satisfaction than Bement's American Poulterer's Companion, one of the starred books on our list. Price $1.25.

Chinese Sugar Cane.

The Journal of the Illinois Agricultural Society publishes a prize article on the culture of Sorghum, and its manufacture into syrup and sugar, by E. F. Newberry, from which we extract and condense the following:

The richest soil gives the largest growth of cane, but not the sweetest, and the syrup will rarely grain. Mr. N. found that cane from the post-oak flats, and from the red clay soil near the timber was much superior in richness to that from the black mold of the prairies. Sorghum proved superior to the Imphee, and to keep it pure, it should be planted at least a quarter of a mile distant from broom-corn or "chocolate corn." Seed should be gathered from the earliest patches, should be fully ripe, and only the upper half of each head be planted, as that portion produces the most vigorous canes.

The time of planting varies with the season, but it may safely be put in a week or two before corn. A piece planted the first of March was frozen in for nearly a month, but yielded a good crop of cane, which made a superior quality of light colored syrup. Fall plowing is advisable, repeating it in Spring, and harrowing thoroughly. With abundance of land and scant labor it is better to cultivate in hills 3 feet apart in 4 feet rows. Soak the seed in warm water for 12 to 16 hours and then bury in sacks in the earth until it sprouts. Roll in dry plaster or ashes if it sticks together. Drop 10 to 15 seeds in a place and cover one inch or less. When one inch high, go through with a harrow having the front tooth removed so that the harrow may go *over* to each row, and follow with the hoe. Continue to harrow, or use the cultivator and tend like Indian Corn, thinning to 5 or 8 stalks per hill when 4 inches high.

Six to ten days before cutting strip off the leaves. This causes the cane to ripen quicker and gives a richer juice. A quick blow with a long wooden knife will strip it rapidly. Do not top the cane until it is fully ripe; then take off the two upper joints with the seed head—and at the same time cut up the cane. There is very little juice in the top of the stalks, and that of poor quality, and incapable of crystalizing.

Cut the cane as soon as the seed is well ripened, and grind as fast as possible. The uncrushed canes may be kept for months if protected from frost by covering or housing, while even a slight freezing, especially before cutting, will give the syrup a bitter, smoky flavor. The grinding mill should be very strong, with two, or better, three rollers—upright if driven by horse power. Let the juice run from the mill through a wire sieve into the barrel or vat. Cook's evaporator is recommended, and a rapid ebullition, using the skimmer, is the best method of clarifying. Boil down three-fourths in the evaporator, and finish in a large shallow oblong pan over a brick or stone arch, into which it is poured through a strainer. Keep up a brisk heat under the finishing pan, until the syrup bubbles like mush, emitting little jets of steam. It is then run into the cooler in a finished state.

To make sugar, reject the upper half of the stalk and boil rapidly, as soon as the juice is pressed out. Pour the thick syrup into large shallow pans or coolers, and stir briskly until cool enough to bear the finger. If it does not begin to grain in a day or two, place in a room heated to 80° or 90°, in open barrels with the lower end bored and plugged in several places. The barrels should stand on blocks so that the plugs can be drawn to let the molasses drain off when the contents have sufficiently granulated.

Important Reports on the Breadth and Condition of the Growing Crops—Reliable Statistics from nearly 200 Counties, Expressing the Opinions of nearly 1000 Farmers.

On page 186 will be found the beginning of an important monthly series of Reports upon the state of the Crops. The Reports this month are limited, but they indicate what is to be done, and how. Owing to the late opening of the Spring, and the lack of requisite time to make up full statistics, not more than half of the reports already provided for are given this month; yet on a single page we have the results of the observations of *nearly One Thousand* persons living in over one hundred and eighty counties, scattered all over the country. Most of those gathering and sending in these reports are intelligent, observing men, who have been designated by Agricultural Societies, Farmers' Clubs, etc., for this special purpose. We feel quite sure that from no other source can so much reliable information be obtained. Next month we shall probably have several hundred reports, but even 200 of them, from different counties, scattered here and there all over the country, and especially in the grain-producing States, will serve as a fair indication of the whole country. We shall still be glad to add to our list competent, reliable men from counties not yet represented.

The reports are very comprehensive, and give in small compass a great amount of statistical information. The numeral **10** is taken for the average, and the comparative surface growing, the condition, etc., expressed in tenths above or below **10**. [See explanations over the reports.] At the end of each column is a general average, obtained by dividing the sum of all the reports under any head, by their number.

SUMMARY FOR THE WHOLE COUNTRY.

A—THE WEATHER averages nearly 9, or a little below the average of other years (10)—taking into account its effects upon winter grain and fruit, and upon general farm operations. The notes accompanying the reports speak of the weather as very backward, retarding spring work, etc., but first-rate for winter grain and fruit.

B—C—OF WINTER WHEAT, the breadth growing averages fully a tenth more than in 1861, and fully one-third more than the average annual breadth, for a period of several years.

D—The general prospects of WINTER WHEAT promise one-third above the average yield.

E—F—SPRING WHEAT—The surface sown this year averages one-tenth more than last year, and eight-tenths more than the average annual breadth for five years past.

G—The prospects for SPRING WHEAT are not quite equal to the average of other years.

H—I—K—INDIAN CORN.—The planting was not far enough advanced on May 10th for those forwarding reports to give full statistics, though many reported the probable number of acres planted and in preparation. These indicate a surface about equal to last year, but a third more than the annual average for five years past. Much fuller statements will appear in the monthly reports hereafter.

L—M—RYE.—Surface sown, nearly the same as last year. Prospects a tenth better than usual.

N—O—OATS.—Surface sown a little above the average, and prospects nearly an average.

P—R—HAY CROP.—Breadth growing and prospects, rather above the average.

S—T—POTATOES.—The surface planted fully an average; prospects rather poorer than usual.

U—V—FRUIT.—Reports almost universally good. The average indicates a double crop of apples for the whole country, and a threefold crop of peaches. These are more indefinite estimates than will be furnished next month.

GENERAL AVERAGE.—The general average of all the figures given in our tables, including surface, prospects, etc., is **12.6**, or one-fourth better than the average of other years. This is more favorable than we had anticipated, until we received and compiled the reports and read the notes accompanying them.

A Change—The Michigan Farmer.

The *Michigan Farmer*, hitherto published at Detroit, is now merged into the *American Agriculturist*. Subscribers who have paid in advance for the *Farmer*, will receive the *Agriculturist* for the *full time* paid for. The services of Mr. Doty, recent Editor and Proprietor of the Farmer, are secured for the *Agriculturist*, and his P. O. address is now at this Office. His former patrons will thus continue to receive the benefit of his labors, and in addition, the advantages of the *Agriculturist*, with its larger facilities, and yet at no advance in the annual cost.

The above is the *seventh* Agricultural Journal merged into the *Agriculturist*, during the same number of years. A friend inquires how long, and how far, this absorbing process is to go on? We answer, just so long as publishers of other journals continue to find it to their own interests, and to the interests of their readers, to propose such changes, if on terms we can afford to accept. No proposition has ever been first made by the proprietor of the *Agriculturist*.

Let us here remark, however, that there are some manifest advantages in this merging process—to the readers, if not to the publishers. For example, the Connecticut *Homestead* was a good paper, and so was the *Agriculturist*, as all admit, we believe; but the *Agriculturist* now has the combined, earnest efforts of the editors of both papers, with no addition to the subscription price. The same may be said, in part, of the union of other papers with this. New York is a central point, almost as accessible, and as directly connected with most sections of our country, as their own capital towns. This may, therefore, well be the central point for issuing a leading journal for all parts of the country. The average circulation of 25 out of the 30 agricultural and horticultural journals in this country probably does not reach 3,000 copies. The circulation of the *Agriculturist*, for sometime past, has ranged from **60,000** to **88,000** copies. Is it not better to combine the efforts of twenty men upon *one* such a journal, than to divide them among *twenty* or *thirty* of 3,000 circulation, each requiring all the office machinery, etc., and necessarily requiring the paying of twenty or thirty subscriptions by any one desiring to avail himself of the advantages of the whole? This concentration of effort at one point has one disadvantage, and one only, viz.: that local matters—of Societies, Fairs, etc.—can not *all* receive constant attention. But the local political and news journals will, in a measure, afford facilities for giving local news, while a few leading agricultural and horticultural papers, at principal points, can furnish the required amount of strictly agricultural information of general interest. We hope the time will soon come when every State shall support at least one first class journal, devoted to the great farming interest; and were farmers sufficiently awake to their true interests, this would be done at once, or as soon as the right men could be found to conduct such journals. But for the time being, it seems a waste of effort to try to keep up one or more vigorous, first class agricultural journals for each locality.

Tobacco Cultivation—No. IV.

Tobacco culturists have now plowed the land deep and turned under a liberal supply of barn-yard manure, and for two, three, or four weeks, the ground has lain exposed to the sun and rains. The influence of these has been very important. The soluble ingredients of the manure have become diffused through the mellow earth, inducing decompositions in the soil itself and rendering still more plant food available. The weathering has a similar effect; in fact, the ground has had a good fallowing with all its beneficial effects, so long as it remained in this condition. Weed seeds germinate under the influence of the May rains, and the rawness of the freshly upturned soil is thoroughly cured.

Were we to prepare a piece of land for tobacco, after proceeding as directed in the May *Agriculturist*, according to the amount of manure then plowed in, or incorporated with the surface soil, we would add more or less. A good surface dressing of well rotted stable manure or fine compost, might first be spread, (unless the land were to need harrowing once or twice to kill the weeds,) and directly upon this we would put 10 to 20 bushels of unleached ashes, three to five hundred weight of gypsum and three or four bushels of salt to the acre, (in the absence of barn-yard manure we would use about 200 lbs. of Peruvian guano of the best quality); and it should be immediately plowed under very shallow, but not so as to interfere with lightly harrowing it; which done, it should be rolled and marked out for planting. Set the plants in rows three feet apart and two feet and-a-half to three feet distant in the rows.

At the very first of this month the seed beds should be looked to, and the plants quickened, if at all backward, with guano water or other liquid manure, so as to be ready for transplanting as soon as the 15th. It is hardly worth while to attempt to transplant tobacco earlier than the middle of June. For some ten days or a fortnight after they are set they are peculiarly exposed to the attacks of the grubs and cut-worms, and they are only free from this danger when they have begun to grow very vigorously; this time comes when we have steady *hot* weather. It is a good rule to be ready to transplant on the first rainy day after the 15th of June. Care must be taken in transplanting; the plants being handled much like cabbage plants, and the smallest of them should have three or four leaves as large as a silver dollar. If the sun comes out hot the next day, mow a few swaths in short thick grass, wet it thoroughly, and use it to cover the plants. Cut hay or straw will do, but is not so good. Keeping a good watch of the plants every morning, the cultivator will see at once any one wilted or drooping, and will often find the worm at the root, and he will replace the plant thus destroyed at the earliest possible moment. Move the plants with a ball of earth attached that they may be less put back and that the field may be more even in appearance. After the plants become well rooted the field is tilled regularly, being hoed and weeded like corn, using the horse hoe or cultivator.

Ladies on Horseback.

Learning that our article on Saddle Horses, a few months ago, interested many, and was the occasion of benefiting several invalids, the writer will now present a few hints on female equestrianism. As a mere accomplishment for young ladies, it ranks high. Perhaps in no place do female charms appear more fascinating, than in the saddle. You may think it is the jaunty cap and plume our Belle wears, or her flowing dress, or the fresh color which riding brings into her cheek, and the sparkle it gives her eye; you may say it is the spirited motion of her palfrey, or the contrast between his rugged strength and her delicate beauty. Analyze it as you please, it will yet be confessed, (certainly by every young man open to conviction) that Belle never looks so charming as when on horseback. We have heard of more than one susceptible youth who has lost his peace of mind by witnessing such a sight. Indeed, to old or young, it is very pleasing. And then, if to this sight you add several young ladies and gentlemen in different colored dresses, prancing along the highway together, you make a picture worth looking at.

The healthfulness of this exercise, few will question. It tends to give a young lady an erect posture; it strengthens her arms, chest, limbs; expands the lungs, gives tone to the stomach, and clearness to the brain. If the digestion is impaired, it will restore it much quicker and better than pills or bran-bread. The fine effect it has upon the spirits is enough to recommend it. How much more enlivening it is than rolling luxuriously over a smooth road in a modern, spring-seated, close-covered, velvet-cushioned carriage! Yet, many of our sighing young misses prefer the latter, 'it is so much more refined!' They think their complexions of satin softness and lily whiteness, would suffer from the exposure of horseback riding! Did you but know it, young lady, nine out of ten young gentlemen would be more pleased with you, if your complexion had the healthier tinge that comes from vigorous exercise in the open air. Who has not known or heard of invalids so weak that they had, at first, to be lifted into the saddle, but who, by steadily pursuing horseback riding for a period of weeks and months, have recovered vigorous health? All of us have known invalids with pulmonary affections, who, having tried the prescriptions of doctors of every school in vain, and having traveled to the sunny South to little purpose, have at last resorted to the saddle, and gained therein more advantage than from all things beside. Many a lady needs out-door exercise, but is too feeble to walk a great distance. Mount your horse, then, not your luxurious carriage. Mount your saddle, and you will find your weak back strengthened, your nerves braced, your head-ache dissipated, and every part of your system toned and invigorated. Your horse will do the hard work for you, and yet give you all needful exercise. He will bear you over the hills and far away into the woods, to gather flowers, and see the birds, and if you like, down yonder gorge to see a waterfall, and over the bridge to a certain farm-house to visit some friend, and see her pleasant occupations. Wherever you will, you can ride, and then come home refreshed and inspirited with new health. In England the ladies ride horseback more than in the northern United States. It often forms a part of their education to learn to sit in the saddle gracefully, and to manage a horse with skill. In the southern states of this country, it has long been a very common practice. The writer of these lines has often raced with Virginia lasses, leaping brooks and ditches, and low fences, side by side with them, and he confesses that he generally (gallantly?) came off second best in the contest—as in duty bound. We are happy to know that female equestrianism is becoming, of late, more popular among us. In many of our cities, riding schools have been established, and along our parks and broad thoroughfares, many a gay company of lady-riders can be seen almost any fair day. So too in the country generally, there is an increasing fondness for this exercise.

HALTER BREAKING YOUNG COLTS.—There is as much advantage in beginning early with a colt as with a boy. It is serious business to most farmers to break a stout four year-old to the halter, and to handling; but begin with a sucking colt, and you have an easy task. He takes gentle handling kindly, may soon be made familiar with the halter, and do your bidding. After a little training, the boys can lead him to the pasture and to water, which will be a good lesson for them, as well as the colt.

Concerning Old Horses.

Not those *very* old hacks, on the shady side of twenty. Not those broken down with hard work, "lame in one leg and blind in one eye." No: we simply mean horses that have got over their youthful follies, and settled down for life into good, honest, staid habits. In age, they may range anywhere between eight and fifteen years; for if they have been properly used, they are not old, in a bad sense, until they have passed this limit. All along through this period, such an animal may be styled our "good old horse," our "safe family horse," and other fond epithets. Who does not like such a beast? Your hair-brained youth, full of daring and lusty strength, may prefer an animal as wild as himself. Horse dealers and fast men may like one that will never allow another to pass him on the road, even though he starts at every strange object in the street—one that prances and paws and chafes under restraint; but sober and sensible men have very different likings. They want a horse that, while he has abundance of spirit, is, at the same time, easily restrained; that does not fret and worry at his work; that carries his rider, or draws his load cheerfully, steadily, vigorously, until his task is done. Your old horse does this. Let him stand idle a day or two, and he will play like a colt. Have a care, or he will dance you out of the saddle. Look sharply, or he will make the old family carriage whirl, and give the ladies a harder jolting than they desire. But ere long he sobers down, and saves his reputation as the "good old horse."

The horse and his master are generally in keeping. The man has sown his wild oats, is married, and has a household to provide for; can't waste his time and strength in exciting follies, and don't wish to expose his family to danger. So he buys him a good old horse, one that can always be relied on, one that has at least $20 worth of *stand-still* in him. Animals like these deserve great respect and consideration. They are the most useful citizens in horse-dom. On them the burdens of life chiefly rest. They manifest a deal of sober dignity, as if conscious of weighty responsibilities. It is painful to see such horses over-driven or over-worked in any way. Of course, they are not as quick as they once were, yet they will work over about as much ground in a day as most young horses, if they be allowed to go at their own pace. They should not be over-strained with heavy loads. Give them reasonable burdens, let them move moderately, and they will work faithfully day after day without flinching. Such horses should have some special care in feed and grooming. Adapt the treatment to their

wants, and they will continue useful many years after they would otherwise have been laid aside. A writer in the Ohio Farmer well says that "the last part of a horse's life may be more profitable, if rightly used, than the first part. There is more comfort and less danger in working old horses. We understand them, and they understand us, and we should be as willing to conform to their nature, as they to conform to our wishes. It would be more humane, as well as more profitable, to use them as they should be, as long as it would pay, and then take them out and shoot them down. But the practice of many is to knock them about as much as they will bear and pay well, and then trade them off to some more inhuman wretch than themselves."

Cost of Keeping a Horse.

In the March *Agriculturist* a request was made for information on this subject, and we have received several responses which are interesting and instructive. W. M. W. of Middlesex Co., N. J., reports the expense of keeping one horse (worth $130,) for 1860 and 1861, as follows:

1860.

23⅛ bushels of corn at 72½c. per bushel	$17.04
33⅓ bushels of oats at 37c. per bushel	12.47
5831 pounds of hay at $15.14 per tun	44.24
Shoeing,	2.54
Total cost for one year	$76.29

1861.

15 bushels of corn at 60½c. per bushel	$9.06
36⅓ bushels of oats at 32c. per bushel	11.79
5500 pounds of hay at $13.33 per tun	36.68
Shoeing	2.45
Total cost for one year	$59.98

R. G. of Warren Co,, N. Y., reports as follows: I have kept horses for the last 40 years, and find that the expense varies much according to the use, or labor required from them. A horse can be kept in ordinary order for doing light work, and nothing more, on the following:

1st 6 months—2 tuns of hay at $6 per tun	$12.00
" 45 bushels oats at 50c. per bushel	22.50
2d 6 months—1 tun hay	6.00
" 12 weeks pasturing at 25c. per week	3.00
" 45 bushels oats at 50c. per bushel	22.50
Shoeing for the year, $6; Grooming, $6	12.00
Depreciation 10 per cent., and interest 7 per cent.	17.00
Total cost per horse for one year	$95.00

Samuel Simpson, New-Haven Co., Conn., writes: "I have kept from one to three horses the past 26 years, part of the time owning land, and raising their feed; but will give a statement of the expenses for two horses kept from May 1856 to May 1861, five years, during which time I bought all their feed. They consumed about

5 tuns of hay annually, at $15 per tun	$75.00
200 bushels of oats at 50c. per bushel	100.00
1 tun of straw for litter	8.00
Shoeing	10.00
Add interest on $300	18.00
Total	$211.00
Sold the manure annually for	20.00
Net cost of the pair per year	$191.00
Net cost of keeping a single horse per year	95.50

During the whole 26 years I have never had a horse die, and in a majority of cases have received more than I originally paid, when I disposed of them. As a general thing I have driven my horses myself, and have been careful to see that they were well taken care of."

These accounts and estimates show very nearly the cost of horse keeping, at the different prices of provender specified. It is proper to add the interest on the cost of the horse, and the depreciation, where these items are omitted. Ten per cent will not more than cover the risk, and depreciation, taking the average. It would have added to the interest of these statements, if the weight of the horses had been named. It usually costs more to keep a heavy horse than a light one, and for many purposes the light horse is the better animal. This item of economy is generally neglected, but worth looking after.

Unruly Milch Cows.

It is no wonder that some cows are fractious, they are treated so roughly. Why kick, pound, and bawl at them? It only makes matters worse. It makes the timid ones shyer, and the spirited ones ill-natured. We urge kindness not only as a matter of humanity but of profit and patriotism—aye, profit to your heart, profit to your pocket, profit to your country. It is vain to try and whip or frighten a cow into quietness and docility. So treated, she dreads and hates to see the milk pail and stool coming, and will prepare herself for a battle. How can she stand patiently and give down her milk, while expecting to receive hard thumps?

Suppose her to be treated kindly—a little salt or some other relish given to her a few times, kind and soothing words spoken, and a little caressing made with the hand. If somewhat restless at first, keep your temper, and follow her up with daily kindness. The result will surely come. She will soon know what to expect from her milker, and will show her likings by unmistakable signs. No person who can not control his passions, and speak low, and be always gentle, should be allowed to milk a cow. It is of importance, too, to milk at regular hours. There should seldom be a change of milkers.

A successful dairyman once observed to an agricultural editor, that one of the secrets of his success lay in the kind treatment he gave his cows. They were driven to and from the watering place, leisurely. No dogs were allowed to distress them. No hired man was suffered to beat or to scold at them; whoever did so, was discharged at once. The cows were well fed, and allowed to take their own time in all their movements, especially in warm weather. Being so treated, and milked regularly and clean, he believed that from fifty to a hundred more pounds of cheese could be made per season from each cow, than if they had been kicked and frightened, and otherwise roughly handled.

Diseases of Calves—Scours.

At this season, the most common and often fatal disease of young animals—colts and lambs as well as calves—is the "scours" or diarrhœa. It manifests itself in two forms, the white, and the yellow. The white scour, as the white is generally called, is caused by indigestion and the decomposition of milk in the stomach; the yellows, by an excessive flow of bile. A heavy damp state of atmosphere is particularly conducive to the generation of this disease. In localities where the land is either low, wet, or badly drained, or subject to be flooded, the attacks are always characterized by greater severity. Some particular grasses, the changing of the pasturage of the mother from a dry upland to either young clover or to low meadows, the removing of the calf from the care of the mother to a strange cow, feeding the calf on stale scalded milk after the cream has been taken from it, without adding a corrective substitute for the essential principles so abstracted, all exercise an injurious influence on the health of the calf by causing relaxation of the bowels or scouring, which, if suffered to continue unchecked, will inevitably result in the loss of the animal; nor is exposure of young calves, and other animals, to wet or cold weather less fatal in consequences.

The disease, if taken in time, is not of itself dangerous—death, in most cases, resulting from the extremely emaciated condition to which the system of the animal is reduced for the want of proper care, in due time. "An ounce of prevention is worth a pound of cure;" therefore, the rearers of young stock should provide good, *dry* pens for their calves, especially those intended for the butcher, and, with respect to those set apart for rearing, they should, whenever the weather will permit, be turned out during the day into a well shaded pasture, taking particular care to house them *early*—before the dew falls.

The treatment of this disease, in its early stages, as a rule, is confined to very simple remedies; *first*, administer ½ oz. of Epsom salts with a very small quantity of ground ginger, dissolved in a little fine flour gruel; by this means the stomach and intestines are cleared of all foreign or acrid matter. After allowing time for the medicine to operate, (8 to 10 hours,) give the following: Prepared chalk, 1 oz.; extract catecheu 2 drachms; opium powder, 1 drachm; peppermint water ½ pint; one tablespoonful three times a day. It will rarely be necessary to continue the use of this mixture for more than two or three days. In cases of great prostration and debility, tonics and stimulants should be given without delay; in such instances give: tincture gentian, 1 oz.; essence of ginger, ½ ounce; peppermint water, 4 ounces; one tablespoonful twice a day. During the time that the cases are under treatment, good, well boiled wheat flour gruel should be given twice a day. This will also often check incipient diarrhœa without the use of other medicines.

A "Commentary" on Roots.

By Timothy Bunker Esq., Hookertown, Conn.

"I should like to know what upon airth you dew to your cattle to make 'em look so slick?" said Jake Frink as he looked into my yard on a bright April morning.

"Dew to 'em, you fool," exclaimed Tucker, "he stuffs 'em with ile meal, and corn, just as you would a sassage."

"I'm mighty glad I don't have the bills to pay," said Jones. "That animal has cost fifty dollars this winter, I'll bet a shad; and 'twouldn't sell for that neow." "Don't be so sure of that," said Seth Twiggs, as he joined the company at the gate, and looked admiringly at Cherry, who had dropped her third calf a few days before. "I am in want of a new milch cow, and will take her at that price without the calf."

"You will have to add ten more to get her, I guess, even if I want to sell," I remarked very quietly, as I showed a pail half full of milk after the calf had taken all he wanted to suck. "But you see I never sell a new milch cow. Making butter and cheese is my business, and milk is my stock in trade. A shoemaker might as well sell his leather, or a tanner his hides, as a farmer sell a new milch cow. The dairy farmer, who has his eye teeth cut, will sell cows only when they are well fattened, or at the close of the milking season."

"But s'pose he has mor'n he wants," said Seth inquiringly, as he loaded his pipe.

"He has no business to be in that fix," I replied. He raises a given quantity of hay, and rough fodder, corn stalks, straw, pumpkins, roots, etc., and he ought to know just how much it will take to bring them out in good condition in the Spring. If he has only fodder enough for twenty head of cattle, he makes a great mistake if he keeps twenty one, and is foolish if he attempts to keep five and twenty. With food enough, he will make a profit on each; with too little, he will loose on every one."

"'Loose *every one*,' you ought to have said,"

interposed Seth, with a knowing wink at Jake Frink for his recent experience with the horn-ail.

"Cherry," I continued, "is what I call a living *commentary on roots*. Mr. Spooner has a good deal to say about the opinions of different commentators on this and that text from which he preaches. I always thought that the best commentary on a man's faith, was his *practice*. His life shows well enough what sort of food his mind lives on, and it is pretty much so with fodder. There's a good deal of truth in the old adage 'The proof of the pudding is in the eating.' The kind of pudding my Cherry has lived on all Winter is turnips, sugar beets, and good hay. Not an ounce of meal upon the honor of a gentleman, and she gave milk until within two months of her calving. You see, now, she is as sleek as a mole, with a bag as big as a milk pail, and a fine calf."

I put the case to my neighbors, Mr. Editor, in that way, and made them see it. I know a good many farmers say roots don't pay for raising, that they are all water when not frozen; and if they are frozen, you might as well feed your cattle on snow banks. I know that the chemists say that they are more than three-fourths water, and not worth half as much as hay, which may be true enough. But what do I care for these opinions, so long as roots make flesh and milk cheaper than any thing else I can raise. I am after milk and flesh by the cheapest method, and if giving water to the stock will bring them, I shall give them water—Jake Frink, and Mr. Retort to the contrary notwithstanding.

White turnips stand particularly low in the scale of nourishment, and yet Cherry had white turnips, a half bushel a day, until they were all gone, and gained flesh upon them. She did better on sugar beets; and for that reason, I think they are worth more, and if they could be raised as cheaply as turnips, I should prefer to raise them. But I do not see how they can be. I can raise turnips among corn, as a stolen crop, for four cents a bushel, and I think all roots that require a whole season—beets, carrots and parsneps—will cost not far from ten cts. a bushel.

My rule is to raise all the roots I can, of the several varieties, so that every animal may have a daily feed of them from November until May. They like a variety of food, and with hay as a staple, I think the greater variety the better, feeding say two weeks upon one kind, then taking another two weeks. Many think they can get more fodder from an acre of land in grass or in corn, than in roots. Not so:—An acre of land has to be highly manured to produce seventy bushels of shelled corn, and four tuns of dry stalks—worth at the market price not far from a hundred dollars, which is perhaps a fair expression of their value for feeding. The same acre, with rather more labor, will produce 1000 bushels of carrots worth from two to three hundred dollars in different markets, just as their value is known and appreciated. I have raised all the roots usually cultivated for feeding, and I come to the bottom of the root bins every Spring with a stronger conviction of their value. *The living commentaries* tell the story a great deal better than I can, and some of my neighbors have got the lesson. Deacon Smith learned it before I did. Mr. Spooner got hold of it early, and he always drives a fat horse, that goes round the parish preaching carrots, wherever he calls, just as plainly as Mr. Spooner preaches election in the pulpit. Now I have nothing agin Mr. Spooner in the world, and I don't mean any reflection on him when I say that the old horse has more "unction" in his preaching than any thing we have in the Hookertown meeting-house on Sundays. There hasn't been a rib in sight since he has owned him, and when he drives up to the door on Sunday morning the horse comes up with a prancing gait, and a coltish air, that says "carrots," as plain as if Mr. Spooner had a bag of them under his carriage seat. I don't talk such things Sundays, but you know a man can't help thinking.

And there is Seth Twiggs, whose brains one might think were all smoked out, has got ideas straight as a ramrod on roots, and raises heaps of them every year, though he has but a few acres of land. Even Jake Frink is waked up by the preaching of Mr. Spooner's horse, though he never hears the man—except at funerals. He goes in for a crop of sugar beets this season, for the first time. Tucker and Jones are not yet converted, but I am expecting even they will be brought in before long.

One of the advantages of the root crop is, that it may be put in late. Rutabagas and carrots may be sown without any detriment any time in the month of June; white turnips a month later, and the first week of June will do very well for sugar beets and mangel wurzels. This last is the most productive of all the roots, and but little inferior to the sugar beet in quality. The "commentaries" on roots are multiplying here.

For the American Agriculturist.

Rocky Mountain Farming.

BY A COLORADO FARMER.

Our climate here is generally the most delightful I have ever experienced. Our rains are periodical and of short duration, say about four weeks, commencing the last of June and ending the last of July. In the mountains the rainy season is longer. The atmosphere is light and dry, the nights cool, the days warm. During the Summer of 1860, we had no warm nights—all cool enough to bear a good comforter—but the Summer of 1861 had all comfortably warm nights. The former year developed no mosquitoes—the latter produced multitudes. Last season we had but little frost in April or May, none to hurt lettuce, radishes, and hardy vegetables. But little snow falls in the valleys during Winter, and we have but few days of severe weather. The cold snaps usually come from January 1 to 15, but sometimes either earlier or later. September, October, November, and December, except a few days, are pleasant beyond any thing I ever experienced elsewhere. Our warm weather in Winter does not produce lassitude; the atmosphere is clear and bracing. Except on the highest, or Snowy Range, little snow falls in the mountains, where the most of the quartz mills are running, and that little does not lie long, except where drifted in valleys. The changes from hot to cold are not greater than I have always experienced in the North, East, and South. Vegetables have been drawn into the mountains all Winter so far; at no time has the grass been covered by the snow. Our cattle have been unhoused and are fattening finely. This Winter is milder than last—about like that of '59 and '60, and a fair average of the winters in this climate.

Severe and killing frost comes September 14 to 17, uniformly—in three Falls it has not varied from these dates; then follows the most beautiful fall weather I ever saw. Certain warning is given to secure all perishable products, and ample time to save fall crops. We have an occasional hail storm; severe blows, with cloudless skies, and sudden changes of weather; we have dry roads all the year—the best natural roads the world ever saw—and general freedom from colds. With proper care this is certainly a healthy climate. But we have yet no system, no care, and few of the comforts of our former homes. As the country improves the little sickness we have will greatly diminish; and I am satisfied our mineral springs, mountain ranches, and country seats, will be the resort of invalids of other climes. Exposure and neglect, with improper diet produce scurvy, fever and rheumatism, with an unusual amount of erysipelas; all which yield readily to proper treatment. Among the prominent causes of diseases may be counted the universal and immoderate use of soda in cooking. Yeast bread must remain a scarcity until the supply of women is increased.

Soil.—Our valley soil is composed of sand, ashes, and decomposed vegetable matter. Most of the tillable land lies in the creek valleys, though there is much of the high lands on the divides, [elevated land between the creeks or "forks,"] which can be made highly productive by the application of water; these uplands have more clay, less sand and decomposed mountain vegetable matter. What we call willow land on the bottoms is very rich and productive—yielding 200 to 400 bushels of potatoes per acre. The soils in the valleys vary from 6 inches to 4 feet in depth, the whole being regulated by the irregular action of the streams in changing their channels in past ages. The bottoms of these are uniformly covered with bowlders and sand. The mountains yield an annual supply of ashes from the burnt districts, which can be rendered useful by irrigation. Our larger valleys, further from the mountains—such as the Platte—have fewer bowlders, and more rich tillable land. When our lands are brought fully into use we shall be able to support a large mining population, and raise nearly every thing we want.

Capacity of Soil and Climate.—Wheat, rye, oats, barley, corn (early varieties), vines (cucurbitous) of all kinds; roots of all kinds; in short, nearly every thing produced for the New-York market can be raised here in great perfection. Sorghum and Imphee cane have both been successfully produced. Sugar beets would attain prodigious size. I have raised Kidney potatoes weighing 1½ and 2 pounds; other varieties grow much larger than in the States. Cabbages 20 and 24 lbs.; pumpkins and squashes enormous, and finely flavored—say 60 to 100 lbs., and fine grained, splendid for table use. Beets, turnips, 8 and 12 lbs. Wheat 35 bushels per acre without irrigation—will probably reach 50 with proper culture. Flat turnips and rutabagas, yield immensely. Hungarian grass also does well. These items will give your readers an idea of what the natural soil will do. The results of manuring, this deponent will not calculate. Potatoes, onions, turnips, and kindred plants, come to perfection even in the mountains.

Fruits.—I fear we shall not be able to raise fruits. Our warm days and cool nights, Spring, Fall, and Winter, will render all tender fruits uncertain, provided there be no other difficulty; the shortness of our seasons will enhance the obstacles. A few fruit trees are planted in this vicinity. On the Arkansas, which rises in the mountains, my brother has started a fine peach orchard which will soon test the southern part of our Territory, and as soon as may be, I shall test this section. Time will likely point out favorable spots, on north hill-sides, and at the base of the mountains—perhaps in the Canons (kan-yons)—where fruits may be successfully grown.

JOHN B. WOLFF.

Fig. 1.

How the Sap Circulates in the Trunks of Trees.

In the town of Yonkers in this State, a few years since (in 1855), after a severe winter, the bark of some six or eight trees in a young orchard was found split down perpendicularly. The trees were not properly attended to, by binding the bark to the trunks and closing the cracks with cement of some kind. In the course of the summer they all died but one. This tree lived and flourished; the bark, however, separated from the trunk and formed a roll upon one side, being attached to the sound parts of the tree above, and to the root below. Fig. 1, represents the appearance of the tree at this period. The edges of the bark grew together and wood was deposited on the interior of the roll. The second year it flourished, the bark trunk becoming firm and woody, and the third year it fruited, the naked trunk decaying rapidly, so that it was necessary to support the top artificially. Finally the old trunk decayed altogether, and the tree, when we last heard of it, presented the appearance shown in fig. 2. In this interesting case we have a demonstration of the received doctrine in regard to the functions of the wood and bark. The injury to the tree having taken place in the winter, the sap wood through which the sap rises in the spring was still capable of performing its functions. The sap ascended through the naked trunk, was elaborated in the leaves, and returning, it passed down the inner film of the bark, depositing the new inner bark and young wood within the bark roll, much as if nothing had happened. By the time that the action of the weather had dried and unfitted the old trunk for a sap channel, there was a new channel already formed within the bark, showing most conclusively that the new wood is a deposite from the bark and independent of the old wood.

Fig. 2.

PEELING APPLE TREE TRUNKS.

There is a practice, precisely the reverse of this, sometimes employed to give old apple trees new bark. It depends upon the fact that when the new bark and the new wood are first formed, they are easily separated from the bark, by which they are deposited, but adhere more firmly to the wood. If about the 20th of June the bark be removed from an apple tree without injuring the trunk (which will appear entirely naked, but is in fact covered with a delicate tissue, conducting the sap as it descends,) a new smooth bark will rapidly form. The time at which this is performed is very important, as a few days too soon or too late makes the operation a fatal one to the tree. We have known trunks of trees which were called hide-bound, or bark-bound, the bark of which was full of insects and covered with moss, thoroughly cleaned, and by this process clothed anew with the smoothest most beautiful bark we ever saw. The general health and condition of the tree was greatly improved, so that they responded to manuring and became again fruitful. We can not, however, recommend the practice, as it seems hazardous and may be so in reality.

The Buffalo Tree-Hopper the Cause of Scars on the Twigs of Fruit Trees.

BY ASA FITCH, M. D., Entomologist to the N. Y. State Agricultural Society.

To the Editor of the American Agriculturist.

From the cuttings of cherry twigs which you sent me, and from information which I previously possessed, I draw up the following account of a malady in the twigs of fruit trees, of which no published notice has hitherto appeared, that I am aware. In Winter or Spring a peculiar kind of crack or scar is sometimes observed on the twigs of apple, cherry and other trees. It extends lengthwise of the twig and is from ¼ inch to 2½ inches long. It occurs on twigs that are nearly or quite ¼ inch in thickness, and two or more of these scars are frequently seen along the same twig. Their surface is slightly elevated above the level of the bark, has a rough, cankered appearance, and shows a deep crack along its middle, in which crack a row of small holes is more or less distinctly to be seen, extending the whole length of the scar. On splitting the twig it is seen that these holes are bored down into and almost through the soft pith in its center, in a slanting direction, and that each hole is somewhat bent or curved and is occupied by the egg of an insect. The eggs are shining, yellowish white, cylindrical with rounded ends, and four times as long as thick—their length being a little more than the tenth of an inch, and exactly filling the holes for about two thirds of their length. In a scar 2½ inches long I count 55 eggs. And now, what insect is it that makes these wounds?

Buffalo Tree-Hopper.

Some years ago I found willow twigs in my own vicinity wounded in this manner, but the holes in the scars were empty, the insects having hatched and left them. In the Spring of 1858, the twigs of apple trees at Akron, O., were very much injured in some orchards by wounds of the same kind. The malady excited the attention of H. W. Howe, Counsellor at Law, of that place, who sent me specimens of the wounded twigs, and some correspondence thereupon followed between us. On learning how much of a novelty these wounds were, and that the insect making them was unknown, he devoted particular attention to this subject, and at length was so fortunate as to detect the culprit in the very act of piercing these holes, and specimens of it were thereupon sent to me. It is thus to Squire Howe that we are indebted for knowing what insect it is which causes these wounds and the manner in which it makes them; and in justice to him I ought, ere this time, to have made his interesting discovery known to the public. This insect is so common through the northern States and Canada, and has such a peculiar form that it has at some time been noticed, probably, by every person who has his eyes open. It begins to be seen soon after the middle of July, and remains until the end of the season. It is from three to four tenths of an inch long, of a light grass green color, freckled rather faintly with whitish dots, and is *shaped like a beech nut*, with two short sharp-pointed processes, like horns, jutting outward in front, one on each side, giving its forward end some resemblance to that of a bull or buffalo. Hence it has received the name of the BUFFALO TREE-HOPPER, or *Ceresa bubalus*, as it was scientifically named originally by Fabricius. It pertains to the Homopterous division of the order *Hemiptera*, and to the family *Membracidæ*. This insect may frequently be seen standing on the small limbs of the apple-tree, the locust, and other trees in our orchards and yards, with its head towards the base of the limb. It remains perfectly motionless and quiescent; but if the finger approaches it, with a sudden strong spring it darts away with such velocity that the eye is seldom able to follow it, or even perceive the direction in which it has thrown itself.

A twig wounded by Buffalo Tree-Hopper.

The piercer, lancet, or ovipositor—the instrument with which the insect perforates the holes in the twigs—closes into its sheath, much as the blade of a pocket knife does into its handle. It is plainly to be seen thus closed in a groove, which is at the hind part of the body on its under side. To perforate a hole, this piercer, as Squire Howe informs me, is held obliquely downward and forward, or like a knife blade a quarter opened. Being in this position and with its point pressed against the bark, it is by a forward movement of its body that the insect draws or thrusts it downward through the bark and soft wood and into the pith. An egg, no doubt, is then passed into the perforation, as the implement is being withdrawn. The wounds which are thus made are scarcely perceptible at first, but become more and more conspicuous with age. It was the last of September when Squire Howe discovered the insect at this work, and some of the wounds then on the twigs he judged from their appearance had been made a month earlier.

The eggs remain in the twigs through the Winter and hatch in the Spring. They do not produce worms, but small active insects which have some resemblance to the parents in their shape, though they are destitute of wings and of the hard shell-like covering which they acquire when they become fully grown. They wander away from the twigs as soon as they are born.

Both the young and the perfect insects nourish themselves by puncturing and sucking the juices of the leaves or of the new tender bark of the twigs. They are thus pernicious to the vegetation on which they occur, as well as by wounding it to insert their eggs. And in seasons when these Tree-hoppers are noticed as being so common as to excite fears of injury to our fruit

trees from them, it may be well to occasionally shake or jar the trees to frighten off these insects—for I think few of them will remain on trees where they find they are liable to be thus disturbed, but will fly away from them to some of the forest trees, which appear to accommodate them as perfectly as do the fruit trees.

For the American Agriculturist.

Experience in Hoeing Wheat.

A few years past I have been trying some experiments in tilling fall wheat and other winter crops—in the Spring as soon as the ground is in condition to stir, say about the last of April and first of May—with decided beneficial results. When the wheat has been sown in drills, it can be hoed with a pick, or broad hoe, if desired; and if sown broad-cast, the ground may be mellowed up with the pick hoe or a sharp stick. It will not injure the wheat if covered a little with earth when small, nor if some of the roots are broken, any more than it will corn. Wherever I have tried the experiment, the difference in yield was very great, the straw being longer, the grain longer kerneled, and heavier per bushel. Heavy soils want mellowing more than open lively soils, and they will bake in the sun unless loosened up by some hoeing process. Those stools that were injured by the winter are strengthened by the hoeing, and branch out, or "tiller," vigorously, while feeble plants become large and healthy. At the same time, all foul stuff that comes up promiscuously among the grain may be removed, letting in light and heat, and the influence of the atmosphere.

I believe thorough tillage on heavy soils will add 25 to 50 per cent to the crop. The hoeing of wheat by hand in this country is rather slow, and it will not pay very well. I have rigged a cultivator with small teeth, on wheels, to follow between the rows, and by the use of handles can guide the teeth between the rows of wheat, to fit any curve that the drill may have made.

I am not making any of these cultivators, but if any person wishes to try the experiment this season, he is welcome to get one up, and I will give all necessary information. A. B. TRAVIS.

Brandon, Oakland Co., Mich.

OXFORD, Mich., Sept. 21, 1861.

This certifies that in May last Mr. A. B. Travis, of Brandon, cultivated a few rows of wheat in a field of mine [with his wheel cultivator] as an experiment; the rows of wheat were easily traced with accuracy, leaving the ground mellow and clean, and without the least injury to the wheat. At harvest I found [estimated] the cultivated wheat 25 to 30 per cent better than that on either side that had not been cultivated, but otherwise had an equal chance. Another year I shall try the cultivator more extensively, and I confidently recommend it to all wheat growers. DAVID G. DUNLOP.

We were present when Mr. Travis cultivated the wheat for Mr. Dunlop, and assisted in harvesting the same, and cheerfully testify to the correctness of his certificate. (Signed by) HENRY VINTON, M. J. DUNLOP, S. VINTON.

Connecting Links.

Links of the form which we represent are exceedingly convenient if at hand when a chain happens to break, and by their use broken chains may be made serviceable until it is convenient to take them to a blacksmith.

The cut represents an iron wire or rod of any desired size, bent to form a link, with flattened ends, which are spread apart so as to admit the other links which it is intended to join. When the chain is linked, the ends are hammered together, and then it will require a great force to draw them out. Blacksmiths often keep on hand similar links of various sizes, but with ends not lapping so much, for the purpose of mending chains, as they require only welding to make them thoroughly secure. The flattening of the ends is important, as it stiffens them.

Labelling Sheep.

It is very customary, in many parts of the world, to mark flocks of sheep upon the ears, as a badge of ownership. However necessary this practice is in large flocks, when sheep are liable to mix—and it is desirable to detect stray ones with the greatest ease—it is not necessary in small flocks of choice sheep, kept several years on the same farm for breeding; and besides, a mark on the wool answers all purposes of marking these flocks. Mr. H. G. White, of Middlesex County, Massachusetts, practises a very simple and commendable way of labelling and registering each of his breeding sheep, which we illustrate, (fig. 1.) Upon a copper tablet of the size of a dime, which is attached by a split, steel ring to the ear of the animal, (fig. 2,) two numbers are stamped, one that of the individual bearing the label, and the other that of its dam. A record is made at the same time in the flock register. The ring is attached to either ear, a hole being made with a shoe punch. It does not rust materially, causes no soreness, being on the under edge of the ear, and close to the head, it does not catch in bushes, is conspicuous enough, and lasts during the life of the sheep. If it be desirable to use these labels as flock marks, they may be made triangular, oval, square, diamond shaped, oblong, and of many other forms; and even two flocks with the same label might be distinguished by wearing them on the right and left ears respectively. The cost (about 2 cents per head) is very slight, considering that the mark lasts a sheep its life time, gives it a name, preserves a record of the dam, and if you will, of the year of birth.

Fig. 1.

Fig. 2.

Hay and Grain Caps—Valuable.

We have yet to hear of any one who has tried home-made cloth covers for hay and grain, that would willingly give them up, among all the large number who have adopted them on our recommendation. The high price of cotton, this year, will operate against their general use, yet even with the present cost of muslin, we feel quite sure it will pay to make them. Coarse unbleached cotton cloth will answer, and the present price of 1¼ yards wide is only 15 to 18 cents, according to the quality and thickness. These caps, to throw over hay-cocks, and shocks of grain, often save the hay, grain and straw from rain and dew, and cure them in enough better condition to pay for the cost in a single year; while with a little care in housing, they will last many years. No farmer who values peace of mind, or good sweet hay, should be without a full supply. A cheap and easy way of making them is as follows: Take strong, unbleached cotton cloth, about forty-five to fifty-four inches wide, and cut it into squares. A larger size would hinder good ventilation of the cocks. Some persons sew into each corner a round stone weighing about eight or ten ounces, to keep the caps in place; others prefer to attach loops of stout linen cord at the corners, for pegging them down. This last method is by far the best in case of high winds. Many farmers use pegs or wires permanently attached to the caps by a cord 6 or 8 inches long. The wires are about a foot long, bent to form an eye at one end, and somewhat pointed at the other. Where wooden pins are used, they are of good stout twigs, or pine, (may be cut from shingles), ½ to ¾ inch in diameter, and 10 to 14 inches long. They may be permanently tied to the caps, or preferably, perhaps, kept separate. When the caps are spread over the cocks, a good careful man takes the pegs in a basket, goes from cock to cock, and puts in the pegs, drawing the cap down tight, and giving the peg quite an upward slant. It is much better to *tie* the cords to the caps than to sew them on, for the corners are puckered by the tying, and the sides shortened, so that there is less danger of their flapping up and taking the wind. When stones are used, it is claimed that the caps are much easier put on and taken off, and that the danger of their blowing off is slight. We prefer the attached loops, with the pins of wood by themselves. It is a job for a rainy day to make a few thousand if you wish—and if they are made of good white-pine shaved shingles, they will be easily picked out of the hay if they get in; and will even run through a hay cutter, in careless hands, without doing it any harm. The caps must never be pegged to the ground, for the hay will settle and leave the caps loose and flapping, and almost sure to blow off. When a heavy rain comes on, always visit the field and see if all the cocks maintain their conical form; if not, raise one corner of the cap and stuff a handful of hay into the crown. Of course, if a *hollow* exists any where, the rain will settle into it and run through. It is neither necessary nor desirable to have the caps made water tight, by any means. They need no hemming.

For the American Agriculturist.

Irrigation Naturally Favors Soil.

While much has been written and well written on draining the soil, but little has appeared in favor of irrigation. I think our great country is loosing much for want of attention to this subject. Having been experimenting some with irrigating, I offer my opinions about it. We have a large quantity of land in this country lying along streams, much of which, especially along large streams, is coarse, gravelly, sandy soil; on this land vegetation starts very early in the Spring and so long as rains fall once or twice a week, continues to grow; but a few days of hot sunshine dries it up. Manure helps the crop surprisingly for the first year, and then it is nearly exhausted. I once thought this was on account of the openness and looseness of the soil, but I have long since changed my opinion, I now believe the strength of the manure evaporates instead of going downwards—(am I right?) This kind of land needs no underdraining, and in short, is very poor land, seldom giving a good crop. But it is the best kind of land to improve by irrigation, that I know of. It becomes warmer when exposed to the sun than any other, and

this is one reason why irrigation improves it so much, for by flowing over it water loaded with fine particles of soil, animal and vegetable substances, the nature of the top soil is entirely changed. The gravely soil separates all the sediment by filtration, and the water passes through it clarified. The poor worthless sand is entirely changed to a beautiful loam, with the best underdraining that can be made, for the gravel remains a few inches below the surface open and porous as it was before. It is true it takes time to bring about this change, for the soil is so open you can not get the water to flow over it until it has tightened the soil. This is accomplished by degrees; every shower that raises the stream does something towards enriching the soil and filling it up, until it gradually extends over the field or meadow, when it will not require half the water needed at first.

A large portion of the land on mountainous districts, or rather what is called rolling land, is capable of great improvement by irrigation at a trifling expense. How often do we see our neighbors up the stream laboring, toiling, and hauling lime and manures of various kinds to prepare their land for a crop; and when they get it well pulverized, and the fertilizers well mixed with the soil, then comes a heavy dash of rain, often washing away a large part of the manure; and it comes rushing over our property, carrying away a portion of our labor with the rest. Now this is unavoidable, but if we could flow this water over a field laid down to grass, our land would become a kind of filter, and catch a good portion of this rich treasure as it passes by. Chemists tell us that common spring water contains in considerable quantity the ingredients needed by all growing crops—just what our land needs. If clear water contains so much nourishment for vegetation, what a large amount must the surface water from cultivated fields contain? Is it wise in us to let it pass by when we might at so small an expense enrich our soils with it? These little mountain streams are often loaded with matter from decaying leaves, etc., and thus prepared to invigorate vegetation; and as these streams start at a great elevation, they may be conveniently made to flow over a good portion of the farms below. J. C.

Frenchtown, N. J.

The Potato Disease.

A writer in the Mark Lane (Eng.) Express, who has made the potato a study for years, arrives at the following conclusions respecting their diseased condition: The fungus which causes their decay is always perceptible with the microscope, and usually to the naked eye. It generally attacks the stems first, and then descends to the tubers. The same fungus is discoverable in the diseased tubers, and in the soil contiguous to them; and a like fungus has never been found on healthy haulm or tubers.

This fungus, when carefully removed from the diseased leaf and transferred to the substance of the healthy tuber, will originate the specific disease at the points of inoculation in from 4 to 8 days. Every sort of potato will, under favorable conditions, suffer; but, as a rule, the thicker the skin the less prone is the tuber to offer a timely nidus to the spores. All remedies of any practical value in checking the disease, are reconcilable with its fungoid character; and as a safeguard diseased stems and tubers should always be burned or deeply buried. Warm, humid weather, with a gentle breeze blowing from a variable point, is favorable to the invasion and rapid progress of the disease; whilst cold, dry weather temporarily checks its advance. The writer's practice for the stay of the disease consists in cutting off and removing the haulm close to the ground when diseased about half way down. Rake the soil over the lower portions of the stems, and leave them for a month. This plan is inexpensive, and usually gives a fair result, in some seasons there being only three, and in others as high as ten per cent of diseased tubers. Those not infected were of good size, mealy, and kept well.

Another good plan is to plant on ridges, and when the disease appears in the haulm, turn it down right and left, and place a little earth over the roots. The fungus is thus washed *away* from the tubers during a rain. [We give the above not to endorse them, but only as the views of one who speaks somewhat positively, and apparently from intelligent experience.—*Ed. American Agriculturist.*]

Haying Time.

In the present month, begins the great hay harvest. This is, in many respects, the most important in the whole year. Although the crop does not fill the space in the public eye, as an article of foreign commerce, which cotton does, it is yet of *greater money value.* Think of its fundamental use, the support of all kinds of farm-stock for six or seven months of the whole year. As one says: "It is, in fact, the basis of all our farm operations, the keystone which sustains them and gives them all their success. The test of a farm is the number of cattle it feeds, and the cattle in turn feed the soil." Let us, then, see to it that our crop this year is well and seasonably made and properly stored.

In preparing for this annual campaign, be sure that all other pressing labor is out of the way. This work is enough of itself to occupy one's time and thoughts while it lasts; to have other cares superadded, harrasses and perplexes one so much as to make his true and proper work very disagreeable. Get all other matters well ahead, so as to feel at ease about them. Then, see that the tools and implements are in complete order—scythes, grindstones, mowing-machines, hand-rakes, horse-rakes, pitch-forks, wagons, racks, and hay-caps. The extra hired help—is that engaged?—enough of it?—and of such a sort as to be reliable?

The best time to cut hay, is an important matter to determine. The *end* sought in gathering hay is, obviously, to cut it when it contains its most nutritive properties, viz., mucilage, starch, gluten and sugar, in the best state for their preservation. Experience shows that *that* period is when the grass is just in full flower. After this time, the fiber becomes woody and indigestible. The Cyclopædia of Agriculture says: "It has been proved that plants of nearly all sorts, if cut *when in full vigor*, afterwards carefully dried, without any waste of their nutritive juices, contain nearly double the quantity of nourishing matter which they do when allowed to attain their full growth, and make some progress towards decay." Yet, some good farmers hold that Timothy should not be cut until it passes this stage, and has nearly ripened its seed; and this chiefly for the reason that, if cut earlier, the roots are weakened and the meadows gradually destroyed. Still, as a general rule, the prevalent method of cutting grass "when in the milk," is the right one.

When hay is to be cut with scythes, the work should begin early in the day: the morning dew is a great help to the mower. There should be a liberal resting time at mid-day, and then the work resumed and carried on briskly until evening. A lunch of plain food, moistened with cold coffee or home-brewed beer, may be brought into the meadow in the middle of each forenoon and afternoon, if the hands will be discontented without it, but it is poor policy to keep the hands and the stomach both at work all the time, and three good meals are *best* for any man, however hard his work. There is enough heat in haying time without the addition of "fire-water." As to the expediency of using mowing-machines, we declare decidedly in their favor, especially on farms of considerable extent. They save time, labor, a great deal of anxiety, and in the long run, money. When the mowing machine is used, do not cut a rod before the dew is entirely off, for when the hay is cut by the machine, unless very heavy, it will need no stirring.

"Make hay while the sun shines," is a good rule, but it may be carried too far in haying time. We want the bright sunshine first to wilt the hay thoroughly; then let the drying process stop. Rake up the grass in high cocks while still hot. If rain threatens, put on the hay caps; put them on by 4 o'clock to keep off heavy dews. The grass may lie in cocks two days or less, as convenient for the farmer. On a clear day, open the cocks, about the middle of the forenoon after the ground is warm, for an airing, spreading the hay and turning once or twice for two or three hours; then haul to the barn. The practice of salting hay, at the time of storing it, is quite common, and it is applied the more abundantly when the hay is imperfectly cured. A little salt, say two or three quarts to the tun, can wisely be applied. More than this does little good, and on the whole, may be injurious.

One Cause of Drouths and Freshets.

It is plain to every observer, that our country is now more subject to drouths than it was twenty or thirty years ago. Within the last five years, we have suffered in this respect seriously. The loss to the farming community, and through it to the whole population, has been many millions of dollars. If they continue for several years more, in frequent succession, there is reason to fear that the "hard times" will pass away very slowly. Is there any natural cause of drouths, or are they sent upon us solely as special visitations of Providence for our national sins? We would not speak lightly of such visitations, but we are inclined to think that our sufferings in this particular may be traced chiefly to our own bad management. The wide destruction of our forests doubtless has something to do with the production of drouths, and of these destructive floods or "freshets" which are becoming alarmingly frequent.

If the country is widely denuded of its trees, the land is more exposed to the burning rays of the sun, and to the winds which cause a very rapid evaporation. Then, too, forest-trees are so many pumps to suck up moisture from the depths of the earth, and to diffuse it through their leaves into all the surrounding atmosphere. From thence it falls upon the surface of the ground. Perhaps some of our readers have amused themselves with making estimates of the amount of water evaporated from the leaves of a single tree, and then of a large forest, in a single day. To one who has never thought about it, the subject is one of great interest. All readers of history know that many of the rivers and streams of the old world, which once were

wide and deep, have now shrunk into much smaller dimensions; from what cause, can any one tell, if not that the hills and mountains are now almost entirely bereft of trees? Drouths prevail all over the Eastern continent, with increasing severity; and scientific and observing men everywhere proclaim that this is owing chiefly to the cause of which we now speak.

Valleys and low-lands, and fertile plains should of course be cleared of trees and devoted to farms and gardens; but at least the rocky hills and mountains should not be shorn of their leafy honors. Let the trees stand sacred from the desolating ax, all along our hights, to break the fury of storms, and to condense and bring down the useful vapors of the clouds upon our fields and into our springs and streams. It is high time that the older States of the Union began to move in this matter, either regulating the destruction of our old forests, or encouraging the growth of new. We believe that some wholesome laws touching this matter would both secure our posterity a good supply of lumber, and a good degree of exception from drouths.

All that individuals can do in this matter is to preserve their own forest land in just proportion, and by underdraining, thus deepening the soil and giving it a porous, spongy character, render the land capable of absorbing and retaining as large a quantity as possible of the water that falls upon it, instead of allowing a large portion to flow off as is now generally the case. Our State Legislatures might, we think, with great propriety remit the taxes for 20 years on all land devoted to high forest, (not *low* woods for charcoal and hoop poles,) and tax land which might but does not carry a good growth of high or low woods at the rate its value would warrant if properly improved. FORESTER.

Improvement of Pine Plains.

At the mention of the words "pine plains," whose thoughts do not at once recur to such regions as Saratoga and Schenectady counties, some portions of Connecticut, Long-Island, New-Jersey, Virginia, and indeed other large sections of the country? Can anything be done to improve this land, much of which is like an ash-heap, and all of it comparatively sterile? Experience shows that it can be ameliorated, yet not without labor skillfully applied.

In many cases this soil has an underlying stratum of marl, which contains most of the ingredients necessary to restore its fertility. And wherever this marl does not lie so near at hand, it can generally be obtained from other quarters at no great expense. We have been informed of its being applied to barren, sandy knolls, which produced no sort of vegetation whatever, and which blew about in the wind; the result was that these knolls yielded a crop superior to that on any other part of the field; these other portions being in good ordinary condition, but receiving no sort of manure. The application of marl serves to give tenacity and consistency to the soil, and prepares it to profit by the vegetable and other manures which should be applied in routine afterwards.

The frequent practice of renovating these lands by clovering and plastering, is excellent and economical. The objection sometimes made, that the clover roots are thrown out by frost, may be removed, partially at least, by thorough harrowing after seeding, and then following with the roller. The usefulness of this last named implement on light soils, is not yet so fully appreciated as it should be.

For lands of this sort, the best rotation is: clover turned in for winter wheat; Indian corn; and barley, oats, or spring wheat with which clover and timothy grass should be sown. Always let the roller follow the seeding. It crushes lumps, fills up interstices, makes the surface compact and smooth, hastens the germination of seed, and causes the roots to strike deep in the soil. The next year after seeding the ground to clover, apply a good dressing of plaster, and devote the land to a hay crop. Next year, plaster again, and let the clover grow until about the last of June, when the sod may be turned under and the land devoted to a grain crop. As to the best method of preparing the ground for wheat, farmers do not quite agree. After the sod has once been turned under, some cross-plow and thoroughly break up the turf before seeding. Others do not disturb the inverted sod, but sow their seed on top of the furrows, harrowing it in and rolling smooth. Farmers are not all agreed whether wheat or corn should follow clover, nor whether the sod should be broken up in Fall or Spring just before planting. This rotation of crops should be accompanied with such annual dressings of marl, ashes, plaster, and such other manures as can be obtained. Muck or swamp mud strengthen the texture and enrich the soil.

For the American Agriculturist.

Demolish Your Fences.

The advice is somewhat radical for an orthodox conservative journal, you say. But perhaps the reader will not differ from the writer very much, when he comprehends our meaning fully. The most conspicuous feature of the northern farm, is its fencing. It must have been a ruling passion with our fathers, and one groans in the spirit to think of the weary days and months they spent in laying stone wall. We have before us, as we write, a little patrimony of twelve acres, cut up into lots of one acre, ¾ of an acre, 1¼ acres, 1½ acres, 2 acres, 1 acre, and the only reason why the balance was not still further divided was the fact that it is a swamp where stones were not convenient for building. This subdivision of land is only a little in excess of what prevails on a large class of farms, particularly those in rough or rocky lands. Farms of one, two, and three hundred acres are numerous, on which there is not a cultivated field of more than ten acres; while one, two, and three acre lots are numerous. Nothing but the pastures were left of tolerable size, and these only because they were too rocky or wet even to admit of plowing. I know of a farm in Connecticut of one hundred and sixty acres that is cut up into twenty five separate lots, including woodland and pasture. Excluding these, the fields would not average four acres each. The fencing upon this farm is much like that of the farms in the neighborhood, and is only mentioned because I happen to be acquainted with it. Taking only one half this as a fair average of the fencing of the improved land in this and the adjoining States, it makes a very formidable item in the expense of the farm. The fact is one that will not be disputed, that there are a great many pretty good farms in New-England, and New-York, at any rate, that will not sell for what the fences cost. An estimate of the cost of fences in the State of Ohio, made by the Board of Agriculture, amounts to 115,000,000 dollars. What the motives of our fathers were, in encumbering the soil with so much fence, except where the land was to be cleared of stones, it is difficult to conceive. If the idea was to get rid of the surface stones, they signally failed, for what can be more in the way of cultivation than a stone wall on the four sides of every acre of land?

Whatever the objects in view, they were no compensation for the manifold evils of small inclosures. The yearly expense of keeping these fences in repair is enormous. It is estimated that it equals the whole cost of renewal once in 15 years. The cheaply built stone wall is soon thrown out of line by the frosts, and is thrown down. The stones often have to be put up every Spring, when the farmer wants his time for other purposes. They hinder cultivation more than any one would suppose, who had not practical acquaintance with the evil. The loss of time to the man and team in turning round at the ends of an acre lot in plowing, harrowing, cultivating, mowing, etc., is very great. The loss of land is also considerable. If a wall is only four feet wide inclosing an acre, yet counting but half, it will occupy six square rods, or about four per cent, making one acre in twenty five. But beside the land actually taken up by the wall, there is a space each side difficult to plow. I have no hesitation in saying that three-fourths of our stone walls are a nuisance that call loudly for abatement. They are an eyesore upon the farm, and as much a blot upon our husbandry as they are upon the beauty of our landscape.

But what shall be done with these walls, if we come to this sweeping conclusion? That of course must depend somewhat upon circumstances. Where the land is worth forty dollars or more an acre for cultivation, I would say use them to construct stone drains. This will put them out of sight, and at the same time put them to a good use where they will pay a large interest upon the money spent in sinking them. A drain constructed with this object in view makes a market for a great quantity of stones; it carries off all surface water, and permanently benefits the soil for rods on each side. A case recently fell under my notice in which one of our best cultivators had dug ditches 3 feet deep, and 4 feet wide at the bottom, and made them the recipients of an immense quantity of stones. The *increased* yield of grass he estimates as paying annually the interest on $300 per acre over and above the extra expenses of cutting and curing. But there are a great many poor farms worth on an average not more than ten dollars an acre, and the poorest part of them not worth five. What shall be done with the fences in this case? To sink the walls for underdraining would cost four or five times as much as the land is worth. If I owned such land I would either sell the most of it, or hire capital to improve it. In its present condition it hardly pays taxes, and the expense of working. We might remove the old fences, and underdrain thoroughly, as far as we went. Clean smooth fields embracing about one-fourth of the whole farm are the desirable thing in husbandry. With the exception of inclosures for the garden and orchard, and a small field or two near the barn, we would demolish all other fences as fast as we could.

The expense of a boy and dog, or a regular herdsman on large farms, is not by any means so great as that of building and maintaining fences as we do throughout this country, to say nothing of the gain in land and other advantages. Cattle and sheep constantly herded and attended by some person, are docile to a surprising degree, and the ability to regulate their feeding so as to accomplish a saving of feed, by making their feed regularly over one part of the pasture at a time, of itself is said to pay the expense of the herdsman. CONNECTICUT.

TENDING GEESE.—FROM A PAINTING BY E. MEYERHEIM.——*Engraved for the American Agriculturist.*

Treatment of Strawberries in June.

Next after clean cultivation, they want water or liquid manure. If the soil is a light loam, gravelly, or artificially drained, it can hardly have too much water. The plants are either in full flower, or full of berries ripening from day to day, and they need abundant supplies of moisture. The days are at their greatest length and the sun shines in its greatest splendor.—The evaporation in one of these long bright summer days is immense, and a drouth just in the critical time often diminishes the strawberry crop one half or more. Mulching is of great advantage as it retains moisture as well as keeps the fruit clean. We can only get the largest berries with abundant watering. For the flavor we are somewhat dependant upon the sunshine. So great is the advantage of watering that we think it would often pay, even in field culture, to have an apparatus for the purpose, like the water carts for sprinkling city streets. In the garden it is entirely practicable, with a garden engine, hydropult, or common watering-pot.

One of the best methods to get plants for a new bed is to start them in thumb pots, as early in the month as practicable. An old plant is surrounded with these pots, and the runners strike their roots into them, and form vigorous plants, which may be transferred to the new bed about the first of August. The roots are perfect, and the plants are not put back. Nearly a full crop may be expected of such plants the first season after the bed is prepared. Of course, old plants that are used for propagating, can not be expected to do much else. A few of the plants may be struck in four inch pots, and kept for the conservatory or parlor in the Winter. Both the flowers and the fruit are ornamental.

The Raspberry.

Cultivators of limited experience are not so generally successful with this fruit, as with the strawberry. All the finer varieties are either of foreign origin, or seedlings of such sorts. Even if not tender or half hardy, they are certain to do much better with a few inches of earth over them, during the winter. Though this is very little trouble, involving less than a half dollar's expense in an ordinary garden, most people will not take it. (After years of trial we have abandoned both the native red and the black. We have many sorts, larger and better every way.)

Others, and they are the great majority, leave the canes to take care of themselves. They are generally planted by the side of a fence or stone wall, where hoeing is inconvenient, if it were the policy to practice it. The old canes are not removed, the new ones are not thinned, and the stools all run together; and between the weeds, grass, and excessive growth of wood, there is little or no fruit, and an utter want of cultivation.

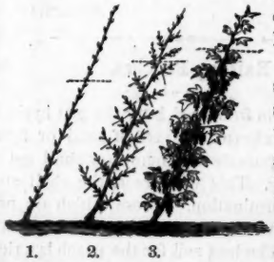
In other cases the leaves are annually attacked by insects about fruiting time, and the young shoots are stunted, and the fruit is imperfect. It is a clear case, that we can not have fine raspberries without some trouble—a little of it at every season of the year.—Just now, the insects must be attended to, or the crop is injured, if not ruined for this season and the next. We have tried nothing quite equal to whale oil soap for all the varieties of worms that attack the leaves. It should be applied in a dilute state, say four pounds to a barrel of water, or the remedy may prove worse than the disease. It is best applied with a garden syringe, though a watering pot with a fine rose will answer. A strong decoction of tobacco is also excellent, and will destroy most of these pests. We have always found it of great service to water raspberries while fruiting. They will drink in soapsuds, and all liquid manures as greedily as a grape vine, and are as much benefitted by it.

There are various expedients for supporting the canes. Some tie them to a single rod or pole driven down by the side of the stool, and where the leaves are already out this is the best method. A better way, earlier in the season, is to tie the tops of the canes in adjacent stools together, in the form of an arch. This arrangement is quite ornamental and is as convenient for picking as any. But the best arrangement is to tie the canes to a wire trellis. Posts of any convenient size, 4 or 5 feet high, are set about 12 feet apart, in the row with the stools. Two number 10 wires are now fastened about 18 inches apart on the posts, and the canes are spread out in fan shape and tied to the wires. This is ornamental and at the same time, gives the plants the most air and sunlight. The old canes are to be removed as soon as the bearing is over, and five or six only of the new ones left to grow.

"Espalier" or Wall Training of Fruits.

Whoever has not practised the close pruning and training of fruit trees upon trellises or walls shrinks from attempting it, as from a great labor likely to be unremunerative. But whoever begins, even in a very humble degree, becomes almost uniformly an advocate of the practice.

The Currant, is probably the easiest of all fruits to experiment upon, and from practice with it the general principles of close pruning may be learned, while the results are most gratifying. Last year George H. Hite, of Morrisania, N. Y., placed upon the exhibition tables of the *Agriculturist*, some extraordinary stalks of currants, and prepared an account of his process, which we condense. He fruits his currants on single canes, on spurs, which he causes to form of nearly uniform strength from the ground to a hight of several feet; and thus these long canes are perfectly clothed with large fine fruit.



1. 2. 3.

In fig. 1 is shown a strong shoot thrown up from the ground at the root of an old bush, or an independent cane. At the end of the first season, it is cut back one *third*. If attached to a trellis or otherwise made to incline the next spring, the buds will all break uniformly from top to bottom. If it stands upright, the sap will flow chiefly to the uppermost buds. When the buds have grown a few inches, as shown at fig. 2, they are pinched off to leave spurs about an inch long, as shown enlarged in fig. 4. These will develop a rosette of buds at the base of each, which are the fruit buds for the next season. The terminal bud at the top of the cane is left, and will have stretched upward considerably. In the autumn shorten it in one fourth of its growth; and the succeeding years still less. The next year the cane will bear full, as shown at 3; and if the soil be good, and the bush has air and light, the fruit will be large and fine. The spurs must be prevented from growing long, and they will bear year after year. Several such canes may be grown from an old root, while the old bush, by stopping in the spurs, will bear much better until the new canes are ready for full bearing. Currants may be set out about a foot apart, two or three such canes grown upon each root, and thus in small compass yield an immense quantity of fruit. (Fig. 1 is proportionately too long.)

Fig. 4.

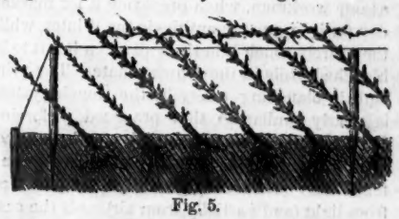


Fig. 5.

Apples and Pears may be subjected to very similar treatment, being planted close, or further apart, according to the system followed or the hight to which they are wanted to grow. Fig. 5 shows an experiment conducted by Mr. F. Otto, in our own garden, which promises success. Dwarf apples are planted one foot apart, and trained to a rod 18 inches above ground. (A wire is perhaps preferable). The inclined position causes them to break throughout their length quite uniformly, and to secure this a greater or less degree of inclination or curving may be given. The spurs if kept closely pinched in, form fruit buds. The tops when they have reached the hight desired are allowed to branch somewhat, and the branches are inarched or grafted together by approach, so that after a few years the fruit-bearing hedge thus formed will be self supporting and substantial and ornamental. Keeping fruit trees under this close control enables us to secure healthy, well developed fruit buds on the spurs, and to protect easily the tender kinds from frosts. Peaches, plums, and berries, do very well upon walls or trellises.

Rout the Curculio.

This enemy of the plum can be routed without the old and laborious process of jarring the trees, and gathering the insects upon sheets. The following remedy has been several years before the public, and has the recommendation of Mr. Cummings, and some of our best pomologists. The writer has used it with success and now feels as sure of the plum crop as of pears. To one pound of whale oil soap, add four ounces of flowers of sulphur. Mix the mass thoroughly with a spatula or knife, and dissolve in about twelve gallons of water, stirring it well.

To one half peck of quick lime, add four gallons of water and stir well together. When fully settled, pour off the transparent lime water, and add it to the soap mixture. Add to the same, also, say four gallons of tolerably strong tobacco water. Apply this mixture when thus incorporated, with a garden syringe, to your plum or other fruit trees, so that the foliage shall be well drenched. If no rains succeed for three weeks, one application will be sufficient. It should be repeated after rains until the stone is hardened. When the plum is about the size of a pea is the best time to apply it, but it is effectual upon all plums not yet stung at any stage of their growth. This mixture is good for cherries, and all fruits troubled with insects.

"Celery as a Field Crop."

To the Editor of the American Agriculturist.

As the writer of the article under the above heading in the March *Agriculturist*, I am induced to reply to the doubt you express, that under the treatment described the celery would not be tender. Permit me to assure you that the very reverse is the case. Celery earthed up in the usual way, when in full growth, tastes much stronger and is far less crisp than when blanched by the trench system. This we find to our cost, as our workmen, when preparing it for market, devour it in great quantities in the Winter, while they rarely touch it in the Fall when it has to be blanched while in the growing state. The principle in blanching celery by the trench system is nearly similar to that practiced in forcing Sea Kale and Rhubarb, and all who have practised it know the high degree of crispness and tenderness attained by growth when excluded from light (and partially from air), as is the case in this method of blanching celery, or forcing of Sea Kale and Rhubarb. I have grown upwards of 15 acres—nearly half a million roots—of celery annually for the last ten years, and in that time have preserved it in various ways, but in no way so safely and cheaply as by the system described in the March *Agriculturist*. In fact nineteen-twentieths of all the celery sold in the New-York markets is thus blanched; all my neighbors for miles around, practice this method exclusively. A JERSEY MARKET GARDENER.

The White Kidney Bean.

"You don't know beans," is a term of reproach much more generally deserved than the world supposes. We have gone through the whole catalogue of beans, pole and dwarf, China, Scipio, case-knife, asparagus, wild goose, marrowfat, cranberry, etc., and have never found any thing to compare with the white kidney for baking. The Lima is decidedly better as a table vegetable, and for making succotash. But the Lima is a pole bean, and is not a sure crop in all parts of the north, while the kidney is as easily raised as the common white field bean, and will mature where any bean will. It should have a good soil, and we will say here, in passing, that we have never known it to run to vines, planted in the richest soil, or at any time of the moon. It is not quite as early as the China, but bears far more abundantly. It is excellent as a snap bean, but baking alone brings out all its excellences. It is easily cooked, very delicate, and thin skinned, and entirely free from the strong taste which marks most pole beans. It is not very widely known, but is so far appreciated that it always bears the highest price in market. It is well known in the cities and among epicures, and ought to be better known among villagers and farmers. We suspect the majority of our readers are still strangers to a perfect dish of baked beans.

Spontaneous Vegetation—Query.

To the Editor of the American Agriculturist.

I have been pleased and profited by your remarks on spontaneous vegetation, and believe them founded in scientific truth. But a few facts have come to my knowledge, lately, which are noteworthy: I send the nuts to your learned readers to crack. Some years ago, a low piece of ground in the suburbs of Albany was raised by dirt brought in by railway trucks from a distant hill side—a hill which had not been disturbed perhaps for centuries. Yet, no sooner had this "made land" been leveled off and allowed to stand for a few weeks, than it produced a rank growth of weeds and grasses. Now, did this vegetation spring from an original principle in the soil, or from seeds, perhaps a thousand years old, buried in that hill?

After the great fire in London, in 1666, the entire surface of the destroyed city became green in Summer with multitudes of a cruciferous plant—the *Sisymbrium iris* of Linnæus. How came they there? Did the fire beget them?

When a salt spring occurs far from the seashore, numerous plants peculiar to maritime regions, are often found in the neighborhood. Does salt air evoke these plants from the soil?

If a lake or pond happens to dry up, the bottom will exhibit a vegetation unlike that of the banks or adjoining fields. Whoever cracks the nuts, let him report. SCHOLASTICUS.

For the American Agriculturist.

The Best Time to Prune.

An old clergyman is quoted as defining this time to be "when your knife is sharp." He was certainly half right, for a smooth clean cut is very essential to the healing of the wound. But there is very great difference in the healing of wounds on account of the season in which they are made. Pruning done in March and April, especially if large limbs are removed, often injures an orchard for life. The sap oozes from all the pores and runs down upon the bark, discoloring and oftentimes destroying it—called scalding. Without other protection, decay begins, and in a few years you have a hollow limb.

We like the month of June for pruning better than all others. If the work is done soon after the new wood begins to form, the wounds made by the removal of small limbs will be nearly covered over the same season they are made. The leaves make such a demand upon the wood for sap that none of it escapes from the wounded pores. It is also a favorable time for thumb pruning. By watching the growth of the shoots upon young trees they may be brought into symmetrical shape without much use of the knife.

JONATHAN.

Raising Peaches.

To grow them from seed, bury the pits in shallow boxes in alternate layers of sand or light earth, and expose them where they shall get a good freezing. This will crack the shell and favor their germination. Those which do not get cracked by the frost, must be broken with a hammer. The best soil for the peach is a rich warm, gravely loam. Plow and harrow into fine condition for working. Lay off the drills three feet apart, and plant the seeds ten inches asunder in the drill, and about an inch deep. This should be done as early in the Spring as the weather will permit. When the shoots appear above ground, go through the rows, and with hand and hoe give them a good weeding, otherwise they will get smothered. When about six inches high, put a cultivator into the rows, using a very careful horse, and then follow with the hoe. This will expedite the growth of the seedlings: in ordinary cases, the planter will have no reason to complain of the slow progress of his little trees. In many cases, budding is not resorted to; it is thought enough to grow new trees from good seed of good parent trees. But, by all means, avoid seed from trees which have the Yellows or any other disease. If pains is taken, one will get good fruit, though it will vary somewhat from the stock. But when it is desired to propagate any known varieties, budding must be resorted to. When this is done, the operation should be performed on the larger seedlings, in the latter part of the first season; say, from the first to the middle of September. As the peach grows quite late into the Fall, this will give the bud time to unite well with the stock before Winter. Next Spring, before growth begins, head back the stock; the bud will soon start, and grow several feet in the season. It will be ready to transplant in the Fall.

A word in reference to the situation of the peach orchard. To guard against late Spring frosts, avoid low, rich ground, and choose rather high and rolling land. Here the trees may grow less luxuriantly, and the fruit ripen a little later, but frost and various diseases will make less trouble. It is a mistake, however, to suppose that the peach is partial to a poor and thin soil. It is often put into this, as in Delaware and New Jersey, because this land will yield no other crop so remunerative. It is chiefly because of the poverty of the land that the peach orchards there are so short-lived, often flourishing no longer than three or four years. Give the peach a good, substantial loamy soil, well drained and moderately enriched, and it will very often remain productive fifteen or twenty years.

In setting out a young orchard, choose fresh land. Plant the trees 16 feet apart unless you know that they are likely to live more than 12 years. Give the land a light annual dressing of manure, and keep it well stirred. After the trees have begun to bear plentifully, no other crop should be taken from the land.

They may be pruned during the growing season to advantage, by pinching in the shoots in sach a way as to give a compact and uniform top, and keep the fruit more within reach. The tendency of the sap, the most rapid growth, and much of the fruit, are always towards the ends of the limbs, and thus, each year, our pruned trees stretch away further and further from the ground. Pinching in gives larger and better developed leaves, better buds for next year, and greater perfection to the fruit, which is borne both on year old, and still older wood. The blooming is so profuse that little fruit is lost by pruning. When thus shortened in in Spring or Autumn, better the former, cut back, leaving only four or five good buds on wood of the past season's growth, and remove at the same time all side shoots that fill up the tree too much.... The experience of Mr. S. S. Gregory, Cuyahoga Co., O., is interesting on some of the points, and we give it as he writes to the *American Agriculturist:*

"Fourteen years since I purchased fifty peach-trees, at eight cents a piece. One of these trees was of "natural fruit," and the remainder were of four sorts: the Melocoton, Morrisania, and the Red and Yellow Rare-ripes. The soil upon which they were set varied in character, part being a gravelly dry loam, tolerably well calculated for peaches, and part just the reverse, low and wet. Since setting out, part of the trees have yielded fruit four times, while a part died without producing enough to pay for the cost and trouble of planting them. As near as I can estimate, besides a bountiful supply of peaches for my own use, the receipts for the fruit sold from the bearing trees have been amply sufficient to pay for all the trees originally purchased, *and for the land upon which they stood.* The chief, and perhaps the sole reason why the bearing trees failed to bear, ten of the fourteen

years, has been hard freezing, which combined with a heavy wet undersoil, killed part of the trees, and materially injured the remainder. Of the fifty trees originally set out, there are now about a dozen remaining alive, and these, with the exception of the one bearing natural fruit, which was bought through mistake, give unmistakable signs of old age. And yet, in 1860, these decrepit trees yielded fruit sufficient to pay for all their cost and the land upon which they stand. In my experience with these trees and about one hundred and fifty others since set out, I find invariably, where the trees were set on land having little gravel or sand, and where the subsoil was heavy and wet, they either died or became so withered as to be of little use—except as a lesson to those setting out peach trees. I find that mulching the trees with straw, leaves, etc., is profitable. It helps to keep a sod from forming round the roots, and greatly promotes the growth of both trees and fruit by preserving a proper degree of moisture. I find that trees of the same sort produce very different sized peaches according to the soil in which the trees are planted; but the size materially depends also upon the number of peaches on any tree. Often trees having only one or two hundred peaches on each, will have fruit of double the size of those which are loaded down to their utmost capacity of bearing. And on the highest limbs where comparatively few peaches grow, the fruit is of a size much larger than on the lower limbs which had many peaches on them. The fruit on a few of my trees was of an inferior quality, on account of my setting them in localities where the ground was too rich."

Experience with Dwarf Pears.

Nothing is more various than the experience of cultivators with this fruit, and nothing more unsettled than the dwarf pear question. Meet one fruit grower, a little enthusiastic, and pump him on this subject, and he tells you that nothing is easier than growing fine dwarfs. Look into his garden, and you see them—splendid pyramids, the bark as clean as the skin of his favorite colt, the limbs coming out nearly at right angles, and loaded with handsome fruit. Look at the further end of his garden, and quite likely you find a tub of soap suds, sink water, or fountain of liquid manure, which reveals the secret of his success. Meet another gentleman, and he tells you dwarf pears are a humbug—a wicked device of nurserymen to impose upon the public. Look into his fruit yard, and you see them dying, dead, bored at the collar by worms, sap blighted, covered with scale bugs—a very good basis for the owner's opinion.

What is the truth upon this subject? Both these men are right. Dwarf pears are a success with the first man, because he takes care of them, and a nuisance to the latter, because he pays no attention to them. I have been cultivating pears since 1850, and have now about 150 trees, standards and dwarfs. The first trees planted were suckers, contrary to the advice of the books, and to the practice of the best pomologists. They were respectively budded with the Flemish Beauty, Louise Bonne de Jersey, White Doyenné, and Winter Nelis, and have never thrown up a sucker. The last two bore for the first time last year, though they have had good cultivation, plenty of manure, and have been shortened in every year. The others began to bear three or four years earlier. They are all well set with fruit buds, this year, and will bear, probably, a full crop. It is a work of time to make a standard pear tree. The next lot was from a traveling agent of an unknown nursery. They did poorly, but with careful nursing got to growing in about three years, and two only, one a dwarf and the other a standard, have made good trees. The standard is a Muskingum, which bore for the first time last year, ten years from the planting. It comes about ten days earlier than the Bartlett—is nearly as large, and to my taste, is better. It is now full of fruit buds, and is making wood fast enough. The dwarf is of unknown variety, bears well, and is growing rapidly. Eight years ago I budded a Flemish Beauty and the Glout Morceau, upon the common Orange Quince. They are among my most thrifty, handsome, and fruitful trees.

A White Doyenné from the nursery, on quince, began to bear the second year, and bore itself to death in three years. The fruit was fair, and without cracks. It was my ignorance that killed it. Another, budded upon a common quince, has made but a poor growth, and never will amount to any thing.

About five years ago I bought a lot of dwarf Louise Bonnes from an honorable nurseryman. They had been in bearing a year or two, and I let them continue to bear, until at this time they are all dead but one. This was my fault.

I bought two Glout Morceaus and three Vicars, dwarfs, about ten years old, the following season. Owing to a second removal two of them died. The other three grew vigorously, and the Vicar has borne fine crops every other year. All are making wood fast enough, and are doing as well as I could desire. Two Epine Dumas bore well for three years, and were destroyed by grubs. This was also my fault. They should have been planted deeper, and have been examined more frequently. This is one of the new pears, an abundant bearer, of excellent quality, ripens in November, and is worthy of a further acquaintance. The Andrews and Bloodgood are hard cases. I could never make them flourish, and after many trials, have not a tree that I should like to show to my neighbors. Have two Dix on quince—one dead and the other alive, but not flourishing. The standards grow, and possibly my grand-children will eat fruit from them, if they occupy the homestead. The dwarf Urbaniste trees have grown finely, but have borne no fruit, six years after planting. The Beurré d'Amalis does well, both as dwarf, and standard, but the fruit is not first rate.

The Buffum makes a tree and fruit that I am altogether pleased with. It grows uniformly in the Lombardy poplar shape, occupies little room, looks "genteel," and is just the tree to plant beside garden walks and avenues. The St. Ghislain, and the Seckel also look well in the same localities. The Buffum looks temptingly upon the tree, and is good enough upon the table. It is one of the best sorts for the seashore, near which it originated. The same may be said of the Flemish Beauty. The Bartlett does so well, and bears so easily as a standard, that it seems a mistake to dwarf it in any case. The only way in which I have been able to get any wood upon young trees, is by persistently cutting off the blossom buds. If this is done for the first five or six years after planting, you can make a vigorous tree, of good form, that will give abundance of good fruit in due season.

I find as the result of my experience, that I am running more and more to standards, though I have still faith in the utility of dwarfs for the garden. Do not touch them unless you have manure in plenty, and mean to take care of them. Nothing but cultivation will make dwarfs a success. CONNECTICUT.

Shad-bush or June-berry as a Pear Stock.

Mr. Charles B. Ott, nurseryman in Bucks Co., Pa., says he has used the June-berry, (*Amelanchier Canadensis,*) for a stock on which to graft the pear, and after 18 years' experience is well satisfied with it for some varieties, while others fail after 10 or 12 years. The Seckel does remarkably well on the amelanchier stock, bearing very fine fruit. Mr. Ott worked his trees four feet from the ground, but would advise budding them close down, as low as on the quince stock. He thinks the native June-berry, (known in New-England, New-York, and Ohio, as shad-bush or shad-blow), has been too much overlooked, both as a stock on which to work the pear, and as a fruit and ornamental tree of itself. The tree, or rather shrub, grows from 15 to 20 feet high, is of graceful form, covered in Spring with handsome flowers of snowy whiteness, hanging in racimes; while the round, purple fruit, nearly as large as the mazzard cherry, is sweet, and not unpleasant to the taste, and very likely susceptible of improvement. As the name indicates, the berries are ripe in June, before other fruit is in eating condition.

For the American Agriculturist.

Transplanting Evergreens from the Forest.

"This," you say, in the *Agriculturist* for April, (p. 102,) "is a somewhat uncertain operation."—So it is as usually practised! The method you propose, I think, would be almost certain to succeed, but it involves the delay of a year, and can be practised only where the trees to be removed stand singly in an open pasture, certainly not where they are found in "the forest."

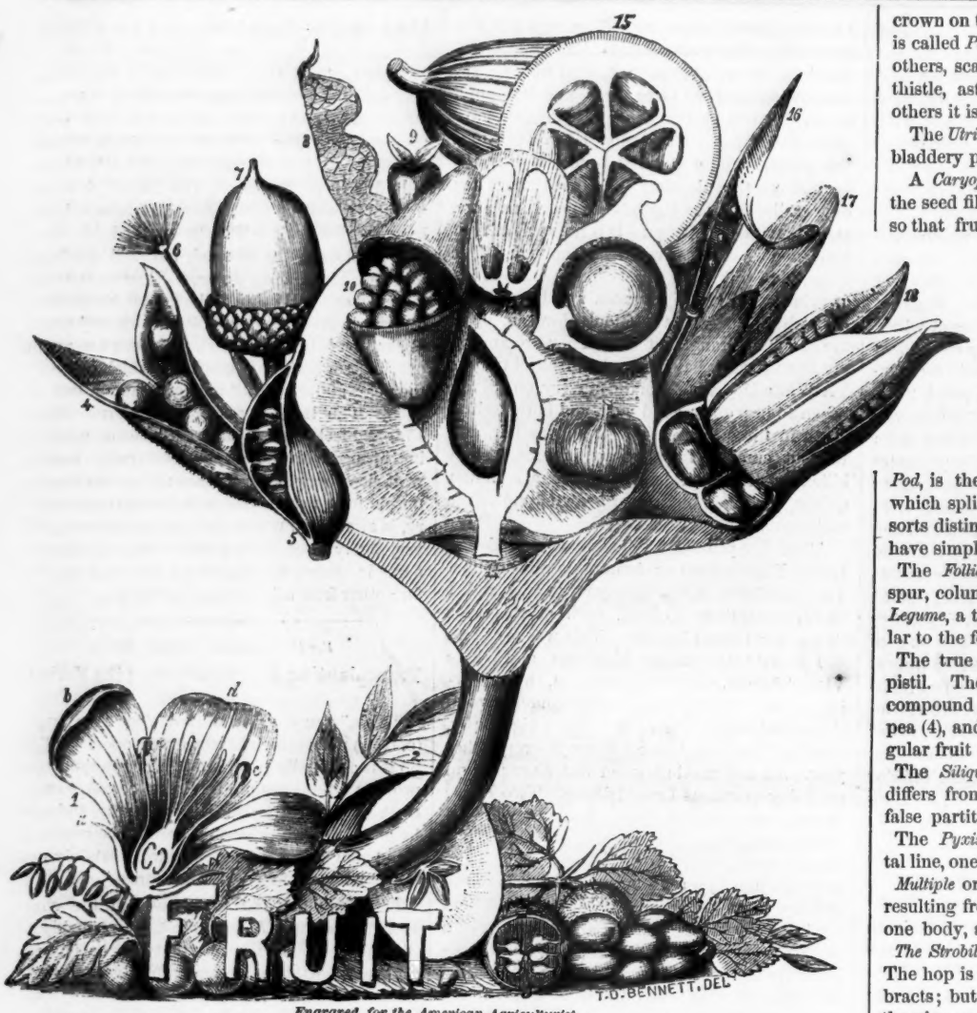
The Hemlock (*Abies canadensis*), and the common White Pine (*Pinus strobus*), are probably as difficult to manage as any that can be named, and may be taken as representatives of their class; but a little study of their habits will aid us greatly in determining the proper time and also the proper mode of transplanting them!

These trees put forth their shoots only once in the year, and then only at the ends of the twigs where preparation was made the preceding Autumn by the formation of buds. These buds begin to start in the Spring as soon as the weather becomes warm, but in this latitude they make little progress until some time in the month of May, and the growth continues until the middle or last of July. The remainder of the year is required to mature the wood thus formed. This rule seems to be absolute for these two specimens; and you look in vain for the appearance of a shoot or twig not in conformity with it! And the same rule holds in regard to the roots, which put forth their shoots at the same time, and probably in the same manner!

Does not this plainly indicate that the proper season for transplanting these trees is at the time when the shoots are starting, or during the time of their vigorous growth? Does it not as plainly indicate the impropriety of attempting it at any other season? It shows also the absolute necessity of preserving as large a part of the roots unbroken as possible, as it is only from the very ends of the little rootlets that the new ones will make their appearance.

My own experience and observation in this region incline me to believe that the best time for transplanting these evergreens is as late as the first of June or even later. And done at this season, and in a proper manner, they are nearly as certain to live as any other trees! J. J.

Middletown, Conn., April 18, 1862.



Engraved for the American Agriculturist.

Kinds of Fruit—A Botanical Description.

BY T. D. BENNETT.

The organs of a flower are of two kinds (1st,) the *protecting* organs or leaves of the flower, consisting of two circles of leaves, the outer called the *calyx*, the inner the *corolla*. (2nd,) The *essential* organs, which are also of two kinds, *stamens* and *pistils* placed one above or within the other. The stamen consists of two parts, the filaments or stem, and the anther, a case which contains the yellow fertilizing dust, called *pollen*. The pistil is in three parts, (beginning from below,) the *ovary*, a hollow case containing rudimentary seeds called the *ovules*, second the *style*, the tapering part above, third the *stigma*, the tip of the style consisting of loose tissue, upon which the pollen falls, when the ripe anthers open. Referring to the flower (1) in the engraving—(a) is the calyx, (b) corolla, (c) stamens, (d) the pistil, with the ovary showing the ovules within. The pollen upon being discharged from the anthers falls upon the stigma and communicates an influence down the style into the ovary: the ovules thus fertilized become seeds, which ripening, with the ovary, constitute the fruit. Proper fruit then is this ripened ovary called seed-vessel or *pericarp*, containing the seeds. Sometimes the calyx (a) adheres to the ovary and thus becomes a part of the fruit, and even forms the principal bulk of it, as in the apple.

Fruits are divided into simple and multiple. Fruits of the former class consist each of a single ovary, one or many seeded, and are classified as Fleshy fruits, Stone fruits, and Dry fruits, etc

In FLESHY FRUIT the walls of the ovary thicken and become soft and juicy. The principal kinds of fleshy fruits are the following:

The Berry which is fleshy or pulpy throughout. The grape, gooseberry (3), currant, tomato, etc., are good examples. The orange, the lemon, the shaddock, etc., are berries with leathery rinds.

The Pepo, or *Gourd fruit* (15), is also a sort of berry, externally firm, and internally pulpy. Cucumbers, melons, and squashes are illustrations.

In the *Pome* (2), such as the apple, pear, and quince, the calyx only is thickened, the star-like core in the center is the ripened ovary.

Of STONE FRUITS the most familiar kind is the *Drupe* (11), such as the cherry, plum and peach. In this, the outer part of the ovary becomes fleshy, like a berry, while the inner hardens like a nut. The blackberry and raspberry are composed of a great number of miniature stone fruits, like cherries, upon an elongated *receptacle*, as the end of the flower stalk is called.

In DRY FRUIT, the seed-vessel remains herbaceous in texture, or becomes thin; or else it hardens throughout. Some forms are *indehiscent*, that is, remain closed; others are *dehiscent*, that is, split open at maturity in some regular way. The principal indehiscent kinds are the following:

The *Achenium*, or Akene. This may be mistaken for a naked seed; but it is a ripened ovary, the remains of its stigma being plainly seen. Of this sort is the fruit of the Buttercup (13). The crown on the top of some species of akene fruit is called *Pappus;* in some it represents a cup, in others, scales, as in the sunflower (9); in the thistle, aster, dandelion (6), and hundreds of others it is cut up into a tuft of fine hairs.

The *Utricle* is the same as an akene, with a thin, bladdery pericarp; as seen in the pigweed (12).

A *Caryopsis* or Grain differs from the last by the seed filling out and adhering to the pericarp, so that fruit and seed are in one body; as seen in wheat, Indian corn and other kinds of grain.—A *Nut* is a dry indehiscent fruit, commonly one-celled and one-seeded, with a hard bony wall or shell, such as cocoanut, hazlenut and acorn (7).—A *Samara*, or *Key fruit*, is either a nut or an akene, furnished with a wing, like maple keys and seeds of the ash, (17), and elm.—The *Capsule*, or *Pod*, is the general name for dry seed-vessels which split open at maturity. There are several sorts distinguished by particular names. Two have simple pistils, namely:

The *Follicle*, a simple fruit opening as in larkspur, columbine, marsh marigold (5), and the *Legume*, a true pod like the pea (4), this is similar to the follicle only it opens at both sides.

The true *Capsule* is the pod of a compound pistil. The difference between a simple and compound pistil can be seen by comparing the pea (4), and marsh marigold (5), with the triangular fruit of the Iris, or Flower de Luce, (18).

The *Silique* (16), the pod of the mustard family, differs from the legume by having a so-called false partition, to which the seeds are attached.

The *Pyxis* is a pod which opens by a horizontal line, one part forming a lid, as in purslane (10).

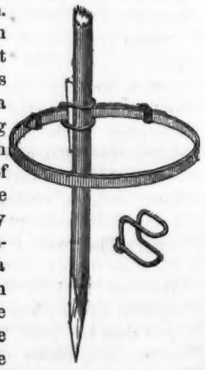
Multiple or *Collective Fruits* are masses of fruit, resulting from several blossoms, aggregated into one body, as the pineapple, mulberry, and fig.

The Strobile or *Cone* is a scaly multiple fruit. The hop is one species where the large scales are bracts; but the name more especially belongs to the pine or fir cone. The scales are *open pistils* overlying each other and pressed together in a spike; 14 is one of these scales of a pine cone.

In this description all the principal kinds of fruit are embraced. Those who may wish a more elaborate description we will refer to Gray's Botanical Text Book. The sketch accompanying is furnished to the *Agriculturist* from a Botanical Plate, probably to be published.

Dahlia Hoops.

A very simple and apparently practical contrivance has been left upon the exhibition tables of the *American Agriculturist*, by Mr. Andrew W. Nicholson, of Brooklyn.



A stout wire is bent in the form shown, so that placing the curved parts of the wire against a plant stake, and passing a barrel hoop through the other looped ends of the wire behind the stake, it may be securely fastened at any elevation on the stake by a wedge placed between the hoop and the stake as represented. The ends of the hoops are secured by two rings of tin or zinc, which allow them to slide freely through, and the hoop thus be enlarged or contracted at pleasure.

Annual Flowers.

We do not wonder at the increasing interest felt in annual flowers. They are the flowers for the million. The seeds for raising them cost but a trifle, many can be got by exchange, or will come as gifts of friendship. And when one gets a good assortment, he can, ordinarily, perpetuate it from year to year without much trouble. Certainly, the work of seed-sowing is less than that of housing bedding-plants through the winter, propagating them by cuttings, potting and repotting, watering, fumigating, and then repotting in the open border. Look at these varieties: Drummond's Phlox, the Double Zinnia, German Stocks, the splendid French Asters, and the new Japan Pinks! The most aristocratic garden would be tame without them. But after all, these and all annual flowers will generally give satisfaction just in proportion to the care that is given them. If sown in hard, barren soil, of course they won't succeed. If huddled together, the matted roots will soon exhaust the ground in which they stand, the leaves and flowers will be imperfect and of short duration. With a few exceptions, annuals should be grown as separate plants, with plenty of room on every side for full development. This needs only to be once tried to convince all gainsayers.

Hints for Lady Florists.

One of the greatest mistakes made in flower-gardens every year, is attempting too much, and crowding the grounds. "My lady" visits several fine gardens, during the Summer, and sees brilliant novelties which she thinks she *must* have next year. Or she gets several nursery catalogues, and reading the high sounding descriptions of plants, she orders more than her garden can well hold, or than she can take care of. The consequence is they fail to do well, and she and her visitors are not satisfied with the effect.

A much better way is, to sit down at the beginning of the Summer, and settle in one's mind how much *room* there will be for new things, and what are, on the whole, the *best*. Get only these, and take the best possible care of them. Give them the right soil, and keep it clean and well stirred. Keep the tall plants neatly tied to stakes. The edgings to the beds should be always well trimmed, the walks clean and hard, and the whole ground neat and tidy. Such a garden will always give satisfaction.

Easy Method of Killing Insects.

For all moths, and beetles that fly at night, use fire to trap them. A fire of shavings, or any thing that will make a blaze, kindled in the evening, will destroy thousands. The more flame the better, if it do not scorch the leaves. A cheaper method still, is to take the half of an old sugar hogshead, or any open vessel, with a broad surface, partially filled with water, and set a lighted glass lantern on a block or stone, in the center of the water at night. The moths are attracted by the lantern and its reflections, and fall into the water. The advantage of the sugar hogshead is, that it serves for a trap by day, as well as by night. For moths that fly by day, we take wide-mouthed glass bottles, half fill them with sweetened water and vinegar, and hang them in the trees, changing the liquid weekly. Thousands of insects are drowned.

"The Hermitage."

On former occasions, we have spoken of the desirableness of creating rustic scenes in pleasure grounds. We now recur to the subject for a special purpose. These wild scenes should not be very near the dwelling, but rather in a retired corner at a distance, where some little touch of natural roughness may be wrought into the artificial creation. Perhaps there is a brook at hand, which can be made to tumble over rocks, into a pool for fish. Along this brook-side, ferns, lilies, and other wild plants may be set. Perhaps there is some spot that can be converted into a *rockery*. Whatever and wherever it may be, let as much as possible be made out of the *natural capabilities* of the place.

To illustrate our ideas, we will describe a rustic scene which has been created in the grounds of a friend, hard by—partly represented in the annexed wood-cut, which we have sketched for the *Agriculturist*. The ground at the left in front of this arbor, is an open, highly finished lawn. The walk which skirts one side of it is kept in fine condition, and a Warwick Vase gives the spot an air of classic elegance. Nothing suggests the idea of rustic wildness. But as the visitor descends a slope in the walk, on the left, he comes among masses of shrubbery, and on turning to the left, suddenly finds himself in the shady arbor shown in our picture. Let us tell how this arbor was made. Six years ago, the proprietor planted fourteen small, low-branched elms around the open space here shown. The second year after, he built a rough arbor of hemlock scantling and slats, just inside of this semi-circle, about ten feet high, and twelve feet in diameter. The trees were then bent over the arched and open roof, and tied down with strong cords. The branches were spread out evenly, like grape-vines on a trellis. In a few years, by pruning and tying in the branches, he covered the arbor with a close network of limbs and twigs, which the summer sun scarcely penetrates. After the branches overhead shall have become more firmly intertwined, he will remove the frame-work, leaving the trees alone to make the arbor as represented.

But the above is not the whole of this Hermitage. For a space of eight or ten feet wide around it, our friend has set all sorts of low bushy trees from the forest, and among them has planted wild vines from the woods. And outside of this, runs a thick screen of arbor-vitæ. The walk, on leaving the arbor, passes into a little woody scene with trees and vines on either side, and arching overhead. Here, and immediately around the arbor, it is attempted to make a miniature wilderness. Throughout the whole of it, the natural soil of the place has been removed, and leaf-mold from the woods brought in. This, with the shade above, furnishes a congenial home for the wild plants, of which there is collected here a large number from the neighboring forests. One or two large bowlders being found on the spot, our friend has hauled in a number more of like character, which now look very much at home. Wild plants and vines clamber lovingly around them. The walk on the right, after winding through a darkly shaded spot, emerges again upon another pleasant open lawn in front of the dwelling.

In the open space of the arbor, seen in the cut, the natural soil has been taken out eighteen inches deep, and the space filled with cobble-stones and gravel, so that the ground is perfectly dry. A few rustic seats are placed in the arbor, which are very agreeable resting-places on a mid-summer noon. The place described, our friend's family style their "Hermitage." They have a separate flower-garden, and ornamental grounds, but nothing which, on the whole, gives them or their guests greater satisfaction with so little labor and cost.

Preserving Fruit—Best and Cheapest Way.

For several years past we have been trying to abolish the old mode of preserving fruits, viz.: the addition of pound for pound of sugar, and stewing them down to an indigestible mass in order to make them "keep." Our efforts in this direction have been in a measure successful; the high price of sugar this year will do much towards the adoption of the newer and better mode. All kinds of fruits can be preserved for a year, or more, with the use of little or no sugar, and at the same time retain nearly all of their natural flavor. The process is not more difficult, and is less costly than the stewing process, while the fruit is far more delicious and healthful. The whole operation depends upon simply heating the fruit through, and then keeping it entirely free from the access of air.

Fruit Jars.—Periodically, as the fruit season approaches, there are numerous fruit jar inventions, patented and otherwise, brought before the public with wonderful assurance and an indefinite number of extravagant recommendations. Some seal with

wax, others with India rubber and cast iron; in some the tops are screwed on; in others, wedged; and in others wired. Some tin, some glass, and some stone, but *all* are "perfect," if the claims of the inventors and manufacturers are fully credited. We have tried most of these fruit jars, and while many of them are good, our experience has led us to adopt the cheapest kinds of glass bottles and jars. Tin cans are not safe. While in a majority of cases they may answer well for a season or two, there is always danger of their corrosion, or rusting, and the consequent production of poisonous salts of tin. Besides, it is desirable to have the fruit in transparent vessels so that it can always be examined. Good well-glazed stone-ware bottles and jars are not objectionable on account of corrosion, but they are opaque, so that the contents can not be seen, and are but little cheaper than cheap glass.

During the past year we have kept several bushels of fruit of different kinds, always in good condition, and the portion now unused is almost as fresh and delicious as when first picked. For keeping, we have used all sorts of *glass* bottles and jars, holding from a pint to two quarts each—including several of the patent jars with caps of various patterns. Among these were a dozen glass jars with India rubber rings expanded by a compressing screw, of which five gave way and the fruit was lost. Of the common glass bottle and jars we have not lost one.—There is hardly a glass bottle of whatever form that can not be turned to account for preserving fruits—even junk bottles, soda-water bottles, jars, etc., etc. The *best* form is a wide-mouthed quart bottle or jar, the neck drawn in to give a shoulder for the cork to rest upon. For the larger fruits wide necks are needed; for the smaller, berry fruits, narrow necks answer perfectly.

Fig. 1.

Fig. 2.

Fig. 3.

PREPARING THE FRUIT.—Our method is, to put the fruit in a preserving kettle of some kind—a glazed iron kettle, or even a tinned one, or a tin-pail will do—and sweeten it with just sugar enough to fit it for the table. The sweetening is added in the form of a syrup made by boiling from one to three pounds of sugar (usually 2 lbs.) with one quart of water. The more juicy fruits, such as strawberries, require less syrup, while pears and quinces require more. The fruit is heated with the syrup just long enough to scald it *through*. Some prefer to use less sweetening and add more when the fruit is to be used. Others use no sugar; they think the fruit keeps just as well, and preserves its aroma better without any sugar. We prefer to use all the sugar that is to be needed, believing that the fruit will probably keep more certainly, and it is then always ready to pour out at once upon the table. The fruit to be preserved should be in good condition—ripe, but not over-ripe, nor containing any decayed portions. Tomatoes are peeled, and then cooked down one-half, as this makes a better sauce, and requires less bottle room.

TO BOTTLE THE FRUIT.—The bottles or jars are thoroughly cleansed, and each one fitted with a stopper. For these, soft corks are best; but they may be made of soft dry wood. For each bottle or jar we provide a little tin "patty-pan," (fig. 1,) costing ½ to 1 cent each by the quantity. Tea-saucers will answer. For *cement* we heat together in an old tin basin or iron kettle, one pound of rosin, and 1½ to 2 ounces of tallow. This may be mixed in quantity, and melted from time to time as wanted. We formerly used a little over 1 ounce of tallow to one pound of resin, but further experience is in favor of a softer cement, when the fruit is to stand in a cool cellar.——While the fruit is being heated as above described, the bottles are well warmed by setting them near the fire and frequently turning them; or better, by setting them in cold water in a wash-boiler and heating to the boiling point. The fruit being barely scalded *through*, it is dipped hot into the heated bottles, through a funnel if the bottle necks are small. This is done carefully, so as not to mash the fruit. The bottles are filled up to where the bottom of the stoppers will come; they are then jarred a little to make the air bubbles rise, and more fruit or syrup added if needed. The tops and necks are then wiped clean, inside and out and the stoppers put in, and sunk to a level with the top. The cement being warmed in the mean time, a little is dipped on over the stoppers to close them tightly. The bottles are then turned necks down into the little patty-pans, or saucers, (fig. 2,) and a quantity of cement dropped in to completely enclose the stoppers and necks. When cold the bottles may be set either side up, (fig. 2 or fig. 3). The cooling will shrink the contents so as to create a strong inward pressure, but the patty-pans prevent the stoppers from being pressed in, and the cement shuts out air.

The whole process is simple and quickly performed. After the fruit is prepared, two persons will heat it, and put up 50 to 100 bottles in half a day. We prefer quart bottles as these furnish enough for once opening. If cork stoppers are used, they are rendered soft and pliable, and may be crowded into a small orifice, by first soaking them in hot water.

SUBSTITUTE FOR PATTY-PANS.—The patty-pans are simply circular pieces of tin, stamped in the form of a cup or plate, 2 to 3½ inches across. We buy them at wholesale for 87 cts., or $1.25 per gross. But any kind of cup to hold the wax, will answer. We have seen the common blacking boxes used, bottom for one jar or bottle, and the top or cover for another. Blocks of wood, or bits of board, cut out into cup-form with a gouge, or bored only part-way through with a large augur, answer every purpose. They should be partly filled with cement, before turning the bottle into them. No one need look far for the materials. The old bottles about the house, thoroughly cleaned, the tin boxes, or old saucers, or wooden blocks, and some rosin are all the apparatus needed.

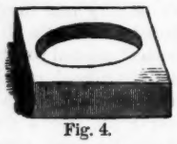


Fig. 4.

ANOTHER METHOD.

An associate editor of the *Agriculturist*, who has successfully practiced the general method above described, recommends a substitute for the stoppers and patty pans, which he has used for some years, and successfully. Pieces of Canton flannel are dipped in heated grafting wax made by melting together 2 parts bees wax, 2 parts rosin, and 1 part tallow. After dipping they are laid, cotton side up, upon sheets of rather light, white printing paper, on a smooth table and additional wax laid on, and the air bubbles rubbed out if necessary. The cloth must be perfectly saturated with the wax, but a large quantity is undesirable. Glass jars are used with a so that the waxed cloth may be conveniently bound on. They are hot, when filled full, with the boiling hot preserves; the prepared cloth is cut into convenient squares of generous dimensions; and the jars or bottles are jarred a little, repeatedly, to force the escape of any air bubbles. The cloth caps being slightly warm are laid, wax down, upon the mouths, and the hand passed over the rims with a firm pressure; then with a stout cord or packthread wound round and round, the edges of the caps are bound down upon the neck of the bottle or jar. As soon as the bottles cool, a depression of the cap will indicate that they are airtight, while the least hole will prevent this concavity, and thus indicate at once the necessity of repeating the sealing process. Should the fruit ferment an inflation of the cap will be noticed, provided the jar is tight.

Washing Machines.

The hard work of "Washing-day" has led to much effort on the part of inventors, to supply some kind of labor-saving machines to lessen the toil of the house-wife. The amount of ingenuity exercised in this particular direction has been so great, that there are now in the Patent Office at Washington, more than *eight hundred* models of patented washing machines, we believe. Yet, notwithstanding their great number, and the amount of advertising and other efforts to bring these machines before the public, in how very few families is there now a washing machine in actual use. There are plenty of them lying unused in the garrets or outhouses—the strongest evidence that, however good in theory, few of these machines stand the practical test. We have tried a score of them, yet all but two have been thrown aside after a patient effort to make them work profitably. The "Metropolitan," with its sixteen spring pestles, working upon a spring pole, is almost perfect, at least it does the work well without injuring the garments. The "help" complain that it is "hard to work"—but they are "constitutionally" opposed to all Yankee machinery, and we do not attach much importance to their complaints. The other, the "Nonpareil Washing Machine," we have now had in use for several months and it has stood the test of actual trial quite as well as any machine we had previously sent home. It is somewhat like the old-fashioned "fulling mill," and certainly "beats out the dirt" without damage to the garments. It is operated by a crank and has a heavy balance wheel which equalizes the force so as to make it work quite easily. On the whole, we are much pleased with it.

For the American Agriculturist.

Making Double-Curded Cheeses.

Many farmer's wives despair of making this great luxury, to say the least, because they have not cows enough. Some years ago, when we first commenced farming, I made very good cheese from six cows, by making them "double-curded." During the first half of June, milk will generally keep sweet, (in a cool place), 36 hours, so that two days' milk can be run up into one curd. To keep the curd over, it must be well drained off in a cheese basket; a coarse linen cloth is the best to wrap around the curd, and a board and weight should be laid on top to press out the whey, after which it may be hung up in the cellar, or in a cool pantry, until wanted. While our second curd is getting ready, we have our first cut up in small pieces of the size of kernels of corn and soaking in lukewarm water, to take out the sourness; a second water too is generally necessary. We find by experience that each of the two curds had better be scalded by itself, as they *run* together when scalded in one vessel. After salting and partial cooling, they can be mixed while putting into the hoop without any such result, and unite just as well, and taste as well, as a single curded cheese. MRS. M. J. S.

Fairhaven, Ill.

A Novel "Pumpkin Pie."

A NEW-JERSEY BACHELOR KEEPING HOUSE.

DEAR EDITORS:—I suppose you will not object to my talking with the good housewives who read the *American Agriculturist*. As I am a bachelor and must necessarily meddle with the household affairs, I deem it servicable to study the mysteries of housekeeping. Some friends call me "Pot Betsy," and my fair city cousins think me over nice and fussy. Of course I don't care for what they say (?), and am very glad *this* house is comfortable and attractive enough to lure my most fastidious city friends to come and visit me. Pray, madams, don't think that

I do all the delicate work, for I employ my farmer's tidy wife, here. Now you know what I am, and will, I trust, allow me to tell you about a mysterious pie.

Yesterday I sat down *alone* with my venerable father at dinner, and noticed a nice *pumpkin* pie on the table. I was really surprised, because I was sure there was not a pumpkin in the house. We tasted it, and declared it to be made of pumpkins, but wondered where the housekeeper got them, and after dinner I asked her. She laughed and said it was made of turnips.—Turnips? Yes. I proposed to render her name famous by asking her recipe to be published in the *Agriculturist*, she smiled, pouted, and went out. Here is the recipe: "Take two good sized yellow turnips; clean and peel them; boil about two hours and mash them. Then add 1 pound of brown sugar, 4 eggs, 2 quarts of milk, ½ cup of molasses, 1 spoonful of ginger, 1 nutmeg, ½ cup of wheat flour. This is then used the same as in making the real pumpkin, or custard pies. MRS. L. E. VAIL." A word more from the Bachelor.

A BEEF'S HEART.

The other day I ordered a beef's heart to be cooked according to a part of the recipe of "H." of Genesee Co., Mich., (in the March *Agriculturist*) and part of that of J. Langdon, Vinton Co., O., in the same paper: as follows: "Gash it, and fill it with beef suet, bread, eggs, parsley, nutmeg, pepper and salt, and boil it." Can I consider this compounded recipe my own? It is very excellent, and I, an old customer of Delmonico, would be quite willing to pay 40 cents per plate for it. J. H. R.

Passaic Co., New-Jersey.

Rhubarb Wine.

A fair article of wine for family use may be made from the juice of the rhubarb in the following manner: Grind or mash, and press the stalks, in any convenient manner. A portable or hand cider mill and press answer well for this purpose. Add as much water as there is juice, and 3 to 4 lbs. light colored sugar to each gallon of the mixture. Put in casks and set in the cellar, with the bung out, leaving it until fermentation ceases, keeping the casks *full* in the mean time. When done working, bung up tight or bottle for use. Small quantities may be put at first into glass bottles or stone jugs.

Double Heeled Socks.

An anonymous correspondent, referring to our engravings and directions, in the Dec. *Agriculturist*, for knitting socks for Soldiers and others, writes: "Would it not be better to make double heels? This is easily done by knitting a stitch and slipping a stitch on the wrong side, and knitting every stitch on the right side."

A Cat's Tenacity of Life.

Cats sometimes seem to have a wonderful hold on life, so much so that the "nine lives of a cat" has passed into a proverb. Mrs. O. G. N. of Black Earth, Wis., gives the following in a note to the *Agriculturist*:

"Our old cat was the pet of the family. When we resided in Rochester, on the banks of the Genesee, one Winter pussy began to grow cross, and from some unaccountable reason, her *good natured fits* became "small by degrees, and beautifully less," until we were in danger of getting roundly scratched if we meddled with her ladyship in the least. My mother finally induced me to part with my pet, and the boys carried her in a bag to the bridge which spanned the Genesee, just above the falls. They "*let the cat out of the bag*," and saw her take the perilous descent over the small fall, just above the main fall, over which she must also have plunged, in imitation of unfortunate Sam Patch. After *ten* days pussy came home, and begged to come in. I was fairly afraid of her at first—thought it might be her *spirit;* but I assure you she was tame enough ever after. She fairly earned her title to the tenth life, which the icy waves had spared.

June.

BY JAMES RUSSELL LOWELL.

"And what is so rare as a day in June?
Then, if ever, come perfect days;
Then Heaven tries the earth if it be in tune,
And over it softly her warm ear lays;
Whether we look, or whether we listen,
We hear life murmur, or see it glisten;
Every clod feels a stir of might,
An instinct within it that reaches and towers,
And, grasping blindly above it for light,
Climbs to a soul in grass and flowers;—
The flush of life may well be seen
Thrilling back over hills and valleys;
The cowslip startles in meadows green,
The buttercup catches the sun in the chalice,
And there's never a leaf or a blade too mean
To be some happy creature's palace;
The little bird sits at his door in the sun,
Atilt like a blossom among the leaves,
And lets his illumined being o'errun
With the deluge of Summer it receives;
His mate feels the eggs beneath her wings,
And the heart in her dumb breast flutters and sings;
He sings to the wide world, and she to her nest,—
In the nice ear of Nature which song is the best?

Now is the high-tide of the year,
And whatever of life hath ebbed away
Comes flooding back, with a riply cheer,
Into every bare inlet and creek and bay;
Now the heart is so full that a drop overfills it,
We are happy now because God so wills it;
No matter how barren the past may have been,
'Tis enough for us now that the leaves are green:
We sit in the warm shade and feel right well
How the sap creeps up and the blossoms swell;
We may shut our eyes, but we can not help knowing
That skies are clear and grass is growing;—
The breeze comes whispering in our ear,
That dandelions are blossoming near,
That maize has sprouted, that streams are flowing,
That the river is bluer than the sky,
That the robin is plastering his house hard by;
And if the breeze kept the good news back,
For other couriers we should not lack;
We could guess it all by yon heifer's lowing,—
And hark! how clear bold chanticleer,
Warmed with the new wine of the year,
Tells all in his lusty crowing!

Joy comes, grief goes, we know not how;
Everything is happy now,
Everything is upward striving;
'Tis as easy now for the heart to be true
As for grass to be green or skies to be blue,—
'Tis the natural way of living:
Who knows whither the clouds have fled?
In the unscarred heaven they leave no wake;
And the eyes forget the tears they have shed,
The heart forgets its sorrow and ache;
The soul partakes the season's youth,
And the sulphurous rifts of passion and woe
Lie deep 'neath a silence pure and smooth,
Like burnt-out craters healed with snow.

The Editor with his Young Readers.

Something about Chemistry.....II.

(*Continued from page* 153.)

Almost every thing that has yet been found in the world, has been examined by chemists to ascertain whether it is a *simple* or a *compound* body, and if a compound body, to find what simple bodies or elements enter into its composition. The process by which the chemist examines the composition of any substance is called "*analysis*." To analyze a soil, for example, is to separate it into its parts, and find what the parts are, and how much there is of each—to find how much sand, how much lime, how much potash, how much iron, etc., there is in every hundred ounces, or pounds, of the soil. Please remember then, that in chemistry, *analysis* means examining a substance to find what it is made of. Thus: to analyze a piece of cake, we might by a chemical process get out the sugar by itself, the flour by itself, the water, milk, eggs, etc., each by itself. The chemist can even go further, and find what *simple elements* make up the sugar, the flour, etc. Suppose we take a dozen different kinds of cake, and analyze them all. In the first, second, third, indeed in all of them, we should probably find much flour and sugar, and some water, butter or fat, eggs, with a small proportion of spices, etc. With the same few kinds of elements the housewife will make perhaps a hundred kinds of cake, all of which will be different from each other in form or color, or texture, or taste. These differences are produced *by using different proportions of the same ingredients*, (flour, sugar, water, spices, etc.); or by omitting one or more of the spices, or by mixing and baking them in a different manner.—Just so, in the making up of the millions of trees, plants, leaves and flowers, bodies of animals, rocks, soils, etc., only a few simple elements are found. They are put together in different proportions, or combined in a different manner. Indeed, you may gather all the plants that ever grew, all the animals in existence, the great bulk of all the soils we cultivate, all the air and all the water on the earth's surface, and set the chemists to work upon them, or on portions of each, and they will be able to find in them *only about fifteen simple elements!* Even more wonderful still, over half of the weight of all these substances, including the rocks and soils, will be found to consist of only one single element! Let us now look a little at

THE ELEMENTARY BODIES.—About fifty of the elements are METALS, such as Iron, Manganese, Copper, Lead, Tin, Zinc, Gold, Silver, Platinum, Cobalt, Bismuth, Antimony, Mercury, Sodium, Potassium, Aluminium, and over thirty others which are only found in small quantities. Then we have a few other *elements* which are seen either in solid or liquid form, or both, such as Sulphur or Brimstone, Arsenic, Carbon (or Charcoal), Phosphorus, Chlorine, Iodine, Bromine, etc.—Finally, we have three which can never be *seen*, because when in a pure uncombined state, they are transparent gasses, or air-like substances. The names of these three substances are: OXYGEN, HYDROGEN, and NITROGEN—pronounced Ox'-y-gen, Hy'-dro-gen, and Ni'-tro-gen. These are very important elements, and you should not be afraid of their names, but learn them, and try to understand something about them. We said that when they are *pure*, or not combined with any thing else, they naturally assume a gas or air-like, transparent form. But the first two, Oxygen and Hydrogen, have strong attachments, (are very affectionate,) and they are always found united with one another, or with something else, and then they may be in a solid form like ice; or in a liquid form like water; or in a gaseous form like the water in its invisible state as it floats unseen in the air.

When one quart of pure *oxygen*, and two quarts of pure *hydrogen* unite, they condense and form a little drop of *water* which is simply a *compound* of these two elements.

When one quart of pure *oxygen* is mixed with four quarts of pure *nitrogen*, they form five quarts of pure *air* which is a mixture of these two elements.

When a little lump of pure black charcoal (*carbon*) is joined with some pure *oxygen* gas, by burning, the two unite and form an air-like, transparent or invisible substance called *carbonic acid*. It is this same compound gas (carbonic acid) that bubbles up in soda water, or in beer; and it is this same air-like substance that swells out in the thousand little holes in light raised bread. The chemist can catch the carbonic acid gas (not air) in the holes of the light bread, and by some of his peculiar processes, he can get a quantity of pure black carbon (charcoal) out of it, and also some pure oxygen.

You now know that water is made up of *oxygen* and *hydrogen;* also, that *iron* is one of the *elements*. Now when you moisten a piece of iron with water, and let it lie awhile, the iron unites with the *oxygen*, taking it away from the *hydrogen*, and forming iron rust, which is a reddish compound made up of iron and oxygen. The chemist calls it "*oxide of iron*," that is, oxygen united to iron. (This oxide of iron is what gives the reddish color to our soils.) But when the iron takes away the oxygen from the hydrogen in the water, the hydrogen does not seem to like to be left alone, and so it grasps hold of some of the nitrogen in the air, and forms another new compound called *ammonia* (harts-horn), which is also a gas or air-like substance, that has a strong pungent odor, such as you perceive in smelling bottles, or in the horse stables, or manure heap, etc. It appears strange that one of the elements of pure water united to one of the elements of pure air, should produce such a strong smelling, choking substance as ammonia; yet such is the case, and this is only one of the ten thousand strange things that chemistry reveals. Still further: the ammonia thus produced by the iron rusting in the water, as fast as it is produced, flies away into the air, and some of it is caught in the little mouths on the leaves of plants, and other portions of it are washed down into the soil by rain and dew, where it is taken up by the roots and carried into the plants, to nourish them. (Our young readers who live on the farm, well know that the best manures or fertilizers to feed plants with, are those which contain most of this pungent ammonia, such as horse-stable manure, Peruvian guano, etc.) Ammonia is produced in a great many other ways, besides the rusting of iron.

Wood contains a good deal of the element *carbon*, or charcoal. A stick heated in a close vessel, or covered up with earth to keep out air, loses its other elements, and we have left a large mass of coal, which is nearly pure carbon. Hard coal, sometimes called stone coal, from its stony hardness, is nearly pure carbon, but not quite so pure as charcoal. When we burn wood, or charcoal, or stone coal, in a stove or grate, the oxygen of the air leaves the nitrogen and unites with the atoms of carbon in the wood or coal, and then we have some of the carbonic acid we told you of above, and this goes off into the chimney unseen, just as it rises from the soda water, or exists in the bread, unseen. After a time the whole of the wood is consumed, as we say; that is, it has been pulled to pieces, and its *elements* have gone off in different forms. Why! a whole cord of wood, or a tun of hard coal, soon escapes through the chimney in its new form, and we are not able to see it go. We see a cloud of smoke, which is only the watery vapor, except when the draft

PRAYER—BY A FRENCH ARTIST.—*Engraved for the American Agriculturist.*

"Now I lay Me—"

Surely this lovely picture needs no words of explanation or description. It tells its own simple story of piety and divine grace in the heart. "Our Father which art in Heaven," bows his ear to hear the low sweet voice of the prayer by which the child, in offering its own petitions, bears the mother's heart heavenward in holy aspiration. Ruskin, the great art critic, writing of the original, at one time on exhibition at the Royal Academy, directs attention to "The little bare feet kept from the cold stone by the garment folded under them, bared of their rough grey stockings, as reverently and surely in God's presence as if the poor cottage floor were the rock of Sinai; the close cap over the sweet, pointed, playful waving hair which the field-winds have tossed and tumbled as they do the long meadow grass in May, and yet have not unsmoothed one wave of its silken balm, nor vexed with rude entangling one fair thread of all that her God numbers day by day. The dear, bowed patient face and hands folded, and the mother's love that clasps them close in a solemn awe, lest they should part or move before her Father's blessing had been given in fullness. Return to it, and still return. It should be the last picture you look at in all the year; carrying the memory of it with you far away through the silence of thatched villages and the voices of the blossoming fields." Sweet will be their slumber, and refreshing as dew from heaven to the ever greatful meadows; and under the influence of this simple confidence in God, of such guileless hearts, their souls will grow in all grace and loveliness, as the meadows respond to the dews, and rains, and sunshine.—We trust there is not one of our dear young readers, who lives a prayerless life; not one who walks upon this beautiful flower-clad earth without often lifting the heart in thankfulness to the Giver of all good; not one that rises in the morning without kneeling to express gratitude for protection and crave divine aid for the right performance of the duties of the day; not one who lies down at night without asking forgiveness for sins and follies, and for the guardian care of the ever-watchful Eye during the night. It is not childish to pray; it is noble, it is manly, it is Christ-like.

carries up some unburned charcoal dust which gives a dark color to the smoke. Chemistry tells why so much heat is given out while the carbon is uniting with the oxygen, but perhaps you can not understand that now. The invisible carbonic acid, (made of the carbon of wood, and oxygen of the air) floats off and is gradually absorbed by the leaves and roots of trees and plants, and the carbon again forms new wood. These changes are very interesting, and we shall learn of many more, equally wonderful.

The whole world is full of these changes, this destruction of old compounds, and the formation of new ones; the breaking up of the new compounds again, and the formation of others. All visible changes going on—such as the growth of plants and of our bodies, the burning of fuel, the separation of iron ore (which is an iron rust, or oxide of iron) into pure iron and oxygen, the manufacture of soda out of salt, the change of flour to bread, the change of bread and meat and other food into blood, and the changing of blood into lean flesh and fat and bones and hair, etc., the changing of hay and grass into the cow's blood, and the changing of her blood into pure sweet milk, the burning and disappearance of the oil or fluid in the lamp, the changing of old cotton rags into pure sweet sugar, and ten thousand other changes of form and substance—all these are directly due to the destruction of one kind of compound bodies, and the formation of new compound bodies out of the *elements* thus set at liberty.

As we have already told you, there are but few elements, but they are united in an infinite number of ways to produce the multitude of things we see. Yet they do not get mixed up at hap-hazard. These elements are governed by certain laws. They have certain *likes* and *dislikes* among themselves, and they follow their stronger inclinations when allowed to do so freely, and it is on account of these likes and dislikes, (their *affinities* as the chemist calls them,) that they are constantly changing. Now, two or more cling together in one compound body; now one of them flies off to something it likes better, and there is a breaking up of old groups (compounds,) and the formation of new ones entirely different; and so the changes go on. The chemist studies out these attachments among the elements (that is, their affinities), and the circumstances which favor the breaking up of groups, and the production of new ones, and he is thus able to control the *elements* themselves, and cause them to do his bidding. He knows, for example, that soda has *some* liking for the volatile carbonic acid gas, and that it holds it fast, making the compound called cooking soda. But he also knows that the soda likes vinegar better than it does carbonic acid. So he puts some soda into a tumbler of water, and pours in a little vinegar. The soda at once quits its partner carbonic acid, and goes to the vinegar, making a new compound. Then, the carbonic acid, being left alone, comes bubbling up through the water, as if in a rage, and flies off in its own proper gas or air-like form, and flies away in search of something else to join hands with. If there chanced to be on the tumbler some freshly burned lime, the carbonic acid would join it, and then we should have a new compound, a real white chalk.

Chemistry is, indeed, a wonderful study—full of interest, and of great usefulness to every body, and we advise every one of our young readers, at least, to learn all they can about it. We will, as we have time and room, try to give an occasional easy and interesting lesson. Please read over and over again, very carefully, these two lessons already given, and try to understand and remember them.

READ THE CHAPTERS ON CHEMISTRY.—They will require some study and thought, but this should not be an objection. That which costs *us* nothing, is generally worth little or nothing.—The subject will grow more and more interesting, *if* you understand it *all* as we go along.

VALUABLE RECIPES.—For preserving the complexion, *temperance;* for whitening the hands, *honesty;* to remove stains, *repentance;* to improve the sight, *observation;* to improve the voice, *civility;* to keep away moths, *industry.*

Blessed is that man or woman that can let drop all the burs and thistles, instead of picking them up and fastening them on to the next passenger. Would we only let the vexing and malicious sayings die, how fast the lacerated and scandal-ridden world would get healed and tranquilized. DR. HUNTINGTON.

A good man, who has seen much of the world, and is not tired of it, says: "The grand essentials to happiness in this life are: *something to do, something to love,* and *something to hope for.*"

Many a man has missed being a great man, by splitting into two middling ones. Concentrate your energies in one direction if you would make a figure in the world.

If a man cheats you, cease dealing with him; if he is abusive, quit his company; if he slanders you, always take good care to live so that nobody will believe him.

Fame is like an eel—hard to catch, and harder to hold.

BROTHERS, WILL YOU MEET US

Arranged by FRANKLIN H. LUMMUS.

1. Girls. Say, brothers, will you meet us, Say, brothers, will you meet us,
Boys. By the grace of God we'll meet you, By the grace of God we'll meet you,
2. Girls. Je-sus lives and reigns for ev - er, Je-sus lives and reigns for ev - er,
Boys. Glo-ry, glo - ry, hal - le - lu - jah, Glo-ry, glo - ry, hal - le - lu - jah,
Full Chorus. Glory, glo - ry, hal - le - lu - jah, Glory, glo - ry, hal - le - lu - jah,
Say, brothers, will you meet us, On Ca - naan's hap - py shore?
By the grace of God we'll meet you, Where part ing is no more.
Je - sus lives and reigns for ev - - er On Ca - naan's hap - py shore.
Glo - ry, glo - ry, hal - le - lu - - jah, For ev - er, ev - er - more.
Glo - ry, glo - ry, hal - le - lu - - jah, For ev - er, ev - er - more.

Entered according to act of Congress, in the year 1858, by G. S. SCOFIELD, in the Clerk's Office of the District Court of the United States for the Southern District of New York.

A large number of readers have requested us to publish in the *Agriculturist* what is called the "John Brown Song," so much sung by the different regiments of volunteers. We have heard it frequently, but could never discover much sense, or at least not much poetic measure, in the words. The *tune* itself is given above, but set to the words as sung in our Sabbath School for four or five years past; and very fine music it is, especially when there are boys and girls enough to sing alternate at first, and then all join in a full chorus. All may sing it together, however. We know of no tune that will better fill a room *full* of pleasant melody. [The notes, as above arranged, are taken from the "S. S. Anniversary Music," by express permission of Mr. G. S. Scofield, who owns the copy-right.]

Shadows on the Wall.

The Shadow Pictures already printed have given much pleasure, and so we continue the series. These all require considerable patience and ingenuity, but we think our young readers, many of them at least, will be successful as we have been. "Piggy" is rather hard for some hands, but others will make it very easily. In forming these shadow pictures, the hands should not always be placed so that the light will fall full and square upon them, but a little turn to one side or the other, will often very much change the effect. The Shadow should, however, ordinarily fall square upon the wall, that is, the lamp must be placed so that the light will fall at right angles to that part of the wall where the shadow is made. Besides, it is not at all necessary to have the fingers close together, by spreading them apart the shadows will often be improved.

THE GOAT.

PIGGY.

THE ARAB'S PRAYER.—"O God, be kind to the wicked; to the good thou hast already been sufficiently kind in making them good."

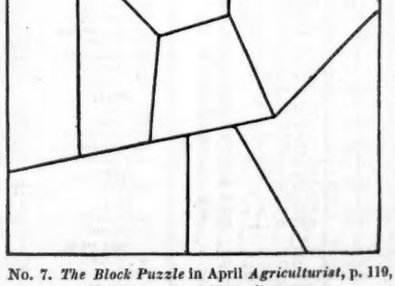
Always take the part of an absent person who is censured in company, so far as truth and propriety will allow.

Answers to Problems.

Answer to rebus No. 4, April *Agriculturist*, p. 119.—*A wise man sometimes changes his opinions; a fool never.*

Answer to No. 5, April *Agriculturist*, p. 119.—*Our national resources are developed by earnest culture of the arts of peace*—(Hour gnat-eye-on-ale re-sour-ces ar-e devil-oped by ear nest cul chewer oft-he arts of peas.)

Answer to No. 6.—"*Seest thou a man diligent in his business?—he shall stand before kings; he shall not stand before mean men.*" [In the rebus, a man diligent in his business is represented as standing before kings, and again *behind* (not before) men shooting little birds. What meaner men than such are there?]



No. 7. *The Block Puzzle* in April *Agriculturist*, p. 119, is done as shown by the above diagram.

Correct answers to puzzles have been received from: S. Sibly Hopkins, 4 and 6; Jerry M. Cochran, 6; S. and J. F. Mills, 4; R. F. Roberts, 4; Lansing L. Porter, 6 and 7; Oliver Combs, 4 and 6; N. W. Johnson, Jr., 5, 6 and 7; Chas. B. Warkwick, 7; Ida, 4 and 6; Luke Robinson, 7, C. Adams, 5, 6 and 7; Irenæus N. Kneeland, 4, 6 and 7; R. W. Weeks, 4, 5, 6 and 7; F. W. M., 4 and 6; E. H. Park, 4, 6 and 7; Maggie Darling, 6 and 7; Mattie Drennan, 7; Amanda Rogers, 6; Jarvis H. Arnold, 4 and 6; J. M. Garretson, 7; I. R. Smith, 4, 6 and 7; Henry F. Miles, 4, 5, 6 and 7; Katie M. Humphrey, 4, 5 and 6; C. L. and A. C. Selwers, 3; F. C. A., 6; L. Harrison's boys, 7; D. B. Rogers, 7; Simeon H. Batterson, 4, 5, 6, 7.

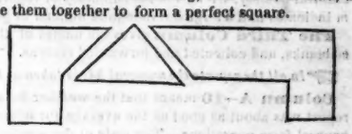
CONUNDRUMS are often most enjoyed when the answers are given at the same time. Master Frank Fargo writes: "I have a pair of pigeons—why are they like a shiftless farmer? *Ans.* Because they'll prop-a-gate until its fall.

When is a farmer like "Old Uncle Ned?" *Ans.* When he loses his hair, O! (harrow.)"

New Problems.

No. 8. This is another rebus founded on a passage of Scripture;—very easy to guess, we think.

No. 9. *Another Block Puzzle.*—Take twelve pieces of block or card, like the following, four of each kind, and place them together to form a perfect square.



No. 10.—AN ENIGMA.

Draw three-fourths of a cross and a circle neat,
Two semi-circles, which an upright meet,
A regular triangle upon two feet,
Two semi-circles and a circle complete,
Which, if well done, the source will show
Of a little "solace," and much harm, too.

The Game of Solitaire.

"Buckeye Boy" sends to the boys who read the *Agriculturist* a puzzle, which is the old game of "Solitaire" played with pegs or checker-men. He directs to check off a square in twenty-five smaller squares or checks, upon a slate, paper, or board, and to place twenty-four buttons, one on each square, except the middle one; then by "jumping" one at a time, in any direction, except cornerwise, and taking off the one jumped over, to remove *all* the buttons except one. The best arrangement for this very pleasant game is with the use of a light piece of board, in which holes are bored, pegs being used instead of buttons. On the under side of the board a piece of broadcloth, or nice leather, may be tacked, to serve as a pocket to hold the pegs. The plan proposed requiring only twenty-four men, is quite simple; but if it is desired by any one to play a harder game, and one requiring more thought, it may be done by adding places for more men.

The Russian Locust War.

Translated for the American Agriculturist, from the German of DR. OTTO ULE.

"Continental papers contained, during the last few years, frightful accounts of the destruction done by the locust. In Bessarabia, these animals covered an area of 128,000 acres with their eggs; in the Chersonesus and Tauric Government, twice that space was occupied. All possible means were resorted to to kill these eggs, such as digging, collecting and burying and burning them, plowing the ground and tramping it hard with horses and cattle. On one piece of land of 1,100 acres near Chotim, not less than 4,400 bushels of locust eggs were collected. About the first of May, when the eggs began to hatch, rollers and harrows were brought into requisition, but all to no avail. Toward the last of July this pest passed beyond Bender on the Dniester, in a width of 6 miles, and in a mass from 7 to 8 inches thick, and crossing the river within 2 days, they spread themselves along the low lands of the opposite shore. Here it was that a battle was fought such as the records of Natural History can show no parallel to—men of all nationalities gathered to defend their homesteads, and in a short time 1,400 men stood in arms against the destroyer. Meanwhile the locust had spread over an extent of 16 square miles. To prevent them from attacking the surrounding fields, deep ditches 24 to 29 miles long were dug, and men placed along these ditches to kill the locusts dropping into them. Others fought them with bush-harrows and brooms in those places where ditches could not be made. Where the ground was clean, hordes of horses and cattle were driven along to crush them. Pickets on horseback were stationed to watch the movements of the enemy breaking through the ranks. Eight days were thus occupied. Three quarters of the locusts were destroyed, when the remainder had completed their last change and became winged insects: on the 9th of July, the first swarms rose into the air and flew in different directions. The battle was not fought in vain. While in the Province of Chersonesus, nearly the whole crop was destroyed, Bessarabia suffered but very little."—*What a lesson for the American farmer!* If we do not have the Egyptian locust, or the large locust, we have certainly other pests liable to become just as great. Not many miles from where we write, we have seen clover fields and Hungarian grass extensively destroyed by the common grasshopper, and the ravages of the Army worms and other insects are fresh in all our memories.

Reports on Crops, May 10, 1862.

(*See General Remarks on page* 168, *and Notes to Crop Reporters on page* 164.)

EXPLANATIONS TO THE READER.

(Full details are given on the Blank Forms furnished to Reporters.)

The First Column gives the principal Counties from which the reports come. In many cases, however, the territory reported from extends over on to adjacent counties, and the figures in reality apply to a larger territory than the county named.

The Second Column gives the number of persons in each county or locality, the average of whose opinions are embraced in the single rows of figures, standing opposite in the same line. In several cases a whole County is represented by an officer of the Agricultural Society, who gives the summary of reports from assistants in each of the towns. *m* indicates that a large but indefinite number of persons joined in making the report.

The Third Column gives the names of the persons who received and distributed blanks, and collected and forwarded returns.

☞ *In all the reports the numeral* **10** *is taken as the* UNIT *or average for comparison*, thus:

Column A—10 means that the weather for a month previous to the date of the report was about as good as the average for other years, that is for Winter crops and for general farm operations. The state of the weather as it has affected the grass crop, is not taken into account. Figures above or below **10** indicate the comparative goodness or badness of the weather.

Columns—B—E—H—In these **10** indicates that the amount of surface growing is about the same as *last year*. Each figure (or unit) above **10** means a tenth more of surface, and each unit below **10**, means one-tenth less. Thus, **5** means one-half of average surface—**15** means one and a half—**20** means double, and so on.

Columns C—F—I—L—N—P—S—In these columns **10** means that the average surface sown or planted or growing is about the same as the average for five years past. Each unit above or below **10** stands for an increase or decrease of one-tenth in the surface.

Columns D—G—K—M—O—R—T—U—V—In these columns **10** means that the *condition* and *prospect* on May 10th indicated an *average yield per acre*. Here also each unit above or below ten indicates the prospect of a yield a tenth above or a tenth below the average; thus, a half crop is indicated by **5**—a double crop by **20**. Some report fruit prospects at **100** to **300**, meaning that the promise is for ten to thirty times the average crop in the localities named.

Blanks in a column indicate that little or none of the crop is grown, or that it is too early to report upon it, or that the reporter could not estimate satisfactorily to himself.

Reg'd No.	County and number of persons reporting from each.	Persons gathering and sending the reports.	Weather.	Wint'r Wheat: Surface vs. 1861.	Wint'r Wheat: Surface vs. av'ge.	Wint'r Wheat: Prospects at date.	Spr'g Wheat: Surface vs. 1861.	Spr'g Wheat: Surface vs. av'ge.	Spr'g Wheat: Prospects at date.	Corn: Surface vs. 1861.	Corn: Surface vs. av'ge.	Corn: Prospects at date.	Rye: Surface vs. av'ge.	Rye: Prospects at date.	Oat: Surface vs. av'ge.	Oat: Prospects at date.	Hay: Surface vs. av'ge.	Hay: Prospects at date.	Potatoes: Surface vs. av'ge.	Potatoes: Prospects at date.	Fruit: Apples.	Fruit: Peaches.
			A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	R	S	T	U	V
	OHIO.																					
1	Washington	3	A. J. Hart	8	12	10	15								12	10	10	6	10	12	5		15	15
2	Auglaize	1	Samuel Craig	10	12	12	12						8		10	10	11	9	14	16	10		100	100
3	Miami	16	Enoch Jones	8	11	12	12								10	10	7	9	10	10			15	25
4	Trumbull	1	L. P. Andrews	25	10	10	30	20	45	12					2	10	20	8					30	50
5	Huron	3	C. B. Simmons	9	11	12	12	10	11	10					10	10		10	9	10				
6	Crawford	1	D. Robertson, jr.	9	10	11	15	20	15	10						10	10						20	15
7	Ashtabula	12	J. W. Kennedy	5	15	20	15	10	15					15	15	20		10		10			20	20
8	Licking	1	G. W. Penny	15	12	12	15				12	12			8	10	10	12	10	10	15		20	20
9	Portage	6	H. G. Spooner	10	10	8	20	12	20	10					12	10	12	9					20	20
10	Stark	12	Jacob Hall	12	12	10	12	20	30	10	10				9	10	10	11		11			13	20
11	Paulding	8	G. N. Goochin	5	15	12	10								5		15	10					10	15
12	Jackson	21	D. Mackley	10	12	15	15								7		10	18	10				15	20
13	Richland	1	Joel Myers	10	12	12	14				13	13		10	14	8	8	10	11	10			25	50
14	Fairfield	5	Thomas Cole	10	12		15					10				8		8					16	20
15	Wyandot	1	J. D. Sears	10	10	13	12							10	12	8	7	14	12				20	20
16	Portage	1	Homer Mills	8	12	10	15							10	10	10	10	10	8	12			12	12
17	Ashland	4	R. M. Close	11	12	12	10	14	15	10				10	9	7	10	10	8				20	20
18	Wayne	17	J. A. Brown	7	11	14	15								10	9	10	12	10				25	40
19	Coshocton	7	J. B. Burt	12	14	12	12	15						8	10	9	10	10	10	11	10		20	20
20	Tuscarawas	1	A. O. Miksch	10	12	13	15				12	13			10		10	10	10				20	20
21	Erie	2	Del. C. Ransom	8	13	11	12	15	20	10		7	8		10	10	8	10	9	12	10		10	200
22	Washington	1	C. F. Hayward	6	18	20	20											10	8	9			25	20
23	Morgan	1	Wm. Milhous	8	12	10	10	10	5	8	10					8	10	10	10	8			12	5
	INDIANA.																							
51	Benton	2	D. Campbell	10	14	30	10	10	3	10					8	10	4	6	15	10			12	
52	Jay	3	Peter Walter	9	11	12	14										8		12	13			12	15
53	Hendricks	7	A. Whitenack	9	11	16	12										10	7	11	13			14	16
54	Knox	5	Joel Wampler	5	12		11					9			10		5			10			10	
55	Randolph	11	C. G. Prickett	9	10	13	15									8	5	10	13				20	30
56	Henry	17	T. B. Redding	8	12	15	14					10				5	10	12	12				14	15
57	Henry	5	John Allen	8	12	13	15					10	10	9		9	9	10	12	10			15	15
58	Sullivan	1	Murray Briggs	7	11	13	15								11	13	8		12	10			12	12
59	Hendricks	11	Jacob Bader	8	10	11	8									4		12	15				10	10
60	Marshall	1	Fred. Hoover	12	13	15	12									10	8	10	8				12	100
61	Ripley	17	E. Saltmarsh	8	11	12	10					10		10	10	8	7	10	12				10	4
62	Henry	1	P. P. Prifner	5	11	13	15					10	11	5		2	3	10	10	10			15	15
63	Vermillion	3	S. Grondyke	5	12	15	15					3	5	9	12	20	6	5	12	20			15	15
64	Hendricks	1	A. Furnas	5	10	11	15					10				8	5	10	9	8	9		10	6
65	Ripley	5	John Bennett	10	12	13	11								11	13	8		12	10			15	15
66	Newton	11	Elam G. Smith	8	15	20	11	10	15	10				13	20	20	10	10	10				25	8
67	Grant	6	Wm. Thomas, jr	10	11	15	20										10	5	5	20			20	30
68	Switzerland	3	W. H. Stow	12	10	12	14					8	9	10	10	12	7	8	10	10	8	6	20	20
69	Green	7	Wm. Hovis	9	10	12	11								13	10	9	8	12	10			11	9
	ILLINOIS																							
101	McDonough	1	Nelson Abbott	11	12	14	15	10	12	15	10	10		10	14	10	10	10	10	8			12	1
102	Coles	1	C. Boles	10	12	15	15							10	10	12		12	15	10	10		10	15
103	Saline	6	James M. Eaton	6	11	15	12							10	10	13	11	20	12	10	11		15	20
104	Jersey	3	J. M. Bacon	10	10	10	15									8	8	12	15				10	15
105	Jasper	1	Henry Griffing	8	15	15	12							12	10	8	6	10	12				10	10
106	Pike	7	Thos. Odlorne	6	12	10	8	5	8		9	9						10	10	10	10		14	14
107	Vermilion	1	H. C. Smith	8	12	10	13	7	7	6			8			8	7	10	12				12	12
108	Richland	1	H. A. Hunt	8	18	35	12									5		20	12				8	10
109	St. Clair	1	Edw. Flanagan	8	12	15	20					9	7			6	5	20	5	5	10		10	5
110	Marion	6	E. L. Merritt	15	15	20	15							10	20			20	15				200	200
111	DeKalb	1	C. W. Branch	8	10	10	12	12	12			7	9			10		10	11					
112	Macoupin	6	Harry Grundy	10	13	12	20	5	20	8						8	10	14	10				12	40
113	Cumberland	4	J. E. Mumford	15	20	20	15	20	10	10				20	15			20	50				15	15
114	Putn'm & Mar	1	C. C. Hosgland	6	8		10	10	10	8				5	10	15	10	10	15				10	
115	Woodford	1	James Freeman	5	10	9	7	8	9	9						9	9	15	10	10			15	
	WIS.																							
151	Sauk	6	Abijah Sweet	10	10	20	10	20	60	10	10	20	10			20	10	10	10	20			10	
152	Dodge	1	D. L. Bancroft	9				10	15	9						10	9	12	11				20	
153	Fond du Lac	6	E. Reynolds	10				10	11	8						12	8	12	10				15	
154	Walworth	1	Geo. Cross	8				10		10	11	9				10	10	10	8	10				
155	Green Lake	5	C. S. Whittier	8				11	11	9						10	9	12	10	10	9	13		
156	Jackson	5	C. T. Gansel	12	8		12	11		12						8	10							
157	Dane	1	L. A. Kierstead	7				10	12	10				10	12	10	10	14	12				10	
158	Trempleau	1	F. W. Newland	10	20	15	12	13	15	9						12	10		12	10			10	
159	Grant	5	J. A. Curtis	15	10	5	15	8	10	10	11	18		10	12	12		15	12					
160	Adams	1	S. W. Pierce	8	10	13	12	10	13	10				14	12									
161	Badax	1	J. A. Somerly	5	11	15	15	12	15	10				11	10	8	10	15	10	10	10	11	10	

Reg'd No.	County.	No.	Chief Reporters.	Wint'r Wheat: A	B	C	D	Spring Wheat: E	F	G	Corn: H	I	K	Rye: L	M	Oat: N	O	Hay: P	R	Potatoes: S	T	Fruit: Apples U	Peaches V
	IOWA.																						
201	Jackson	9	H. Stephens	7				12	9	8						10	9	20	10	10			
202	Clinton	13	C. W. Hatch	5				12	15														
203	Cedar	28	J. A. Macy	10	10	3	15	10	23	8						15						10	
204	Fayette	4	H. C. Wood	12				11		12													
205	Ringgold	1	I. S. Beall	8	10	15	10	10	15	8	10	15	8	15	10	15	8	8	10	20	10	12	12
206	Delaware	30	J. L. McCreery	8				14	17	9	11	13					8	8	8	7	10	9	13	
207	Powshiek	13	Erastus Snow	8				9		10													13	
208	Marion	5	B. C. Bellamy	4			12			10				15	12		10	30	15				10	
209	Cedar	6	J. C. Alexander	5				11	13	5							10	5	12	12			15	
210	Madison	1	J. Carman	9	10	10	15	8	10	8				5	15		10							
211	Scott	1	T. F. C. Schmidt	8				11	15	10						10		11						
212	Buchanan	*m*	H. C. Heminway	8				11	13	10	10	12	10	9	13	11	10	12	12	12	10	15		
213	Howard	5	C. Marshall	15				14	40	13	18	25				30	13			12				
214	Lucas	1	M. Moorhead	10				7	12	8						7	8							
215	Page	51	SH Kridelbaugh	8	11	20	10	11	99	10	10	70				40	10		10	50		10	4	
	MINN.																							
251	Hennepin	11	Jonas H. Howe	12				11	18	10					3	10	15			12				
252	Fillmore	1	A. Gould	11	10		15	12	20	15	13	15	9	11		12		10	10	10				
253	Dodge	2	T. G. Patch	10				15	40	10						20	10							
254	Olmstead	2	E. H. Talbot	11				13	25	10	13	29				10	10	20						
255	Winona	10	S. R. Crittenden	13	13	30	25	11	15	14	12	9			6	10	15	10	12			11		
256	Sibley	9	J. U. Green	12				15	35	9	18	30			8	10	20	10		25				
	MO.																							
300	Maries	7	W. J. Meeder	8	9	10	10	11	15	10	10	12	8	10	10	9	8	10	10	10	8	10	10	
301	Mississippi	1	Geo. Whitcomb	11	10	12	10				5		10			10	10	10	10	10	10	10		
	KY.																							
326	Spencer	10	Milton McGrew	7	10	11	9				10	7	6	5	9	6	12	8	11	8	5	6		
	MICH.																							
351	St. Joseph	15	O. W. Beall	5	10	10	10				9	10				10		11	10	11		20	20	
352	Berrien	1	A. Bennett	8	10	12	15											10	10			15	20	
353	Clinton	*m*	H. C. Hodge	12	12	20	12	10	15	10	12	15	10			15	10	15	10	15	10	15	15	
354	Jackson	21	L. D. Watkins	12	10	14	15				8	10				5		10	5	10		20	15	
355	Sanilac	13	C. Waterbury	7	20	30	15	5	8	10				10	10	15	10	15	12			10	10	
356	Calhoun	1	C. M. Keep	5	10	12	9									10		12	8			10	20	
357	Clinton	6	John Watling	6	16	40	18	15	35					10	12	10		45	10			15		
358	Lenawee	7	Rufus Baker	12	11	11	13				10	10				10		10		9		8	80	
	N. Y.																							
401	Chautauqua	1	John J. Phelps	12	10	12	10	10	10	10						11	10	10	8	10		15	20	
402	Orleans	1	Peter Ferris	7	12	20	11	10	15							5		10	12					
403	Lewis	1	John F. Bates	8														15	4					
404	Wyoming	6	Linus De Wolfe	4	15	8	15	12	15									10	13			20	20	
405	St. Lawrence	1	J. S. Wallace	6		11										8	10		8			11		
406	Delaware	4	Levi Miles	10	7	10	15	8	10							18	15	9		18	10	12	10	
407	Niagara	4	J. Q. Adams	15	10	10	12	13	12									10	15			15	20	
408	Suffolk	1	G. E. Woodruff	10	12	10	15	5	8	10	12	10		11	15	18	10	12	9	15				
409	Fulton	1	Geo. W. Heaton	6	10	14	9		14	9								10				9	9	
410	Niagara	1	A. E. Raymond	8	15	40	20	7	15	10									8	20	15	8	50	
411	Oswego	1	D. Farling	5	8	8	8	5	8	10								12	15	8	8	20	20	
412	Chenango	8	H. T. Richmond	8	12	20	8	8	5					10	10		10	12	8					
413	Otsego	2	H. T. Richmond	8	12	20	8	8	8					10	10	10		12	8					
414	Wayne	1	A.M.Richardson	10	10	18	9	15	20					1	10	10								
415	Cayuga	1	B. W.Thompson	10	12	14	12	10	10	8	10	10		6	11	8	8	10	10			15	15	
416	Chautauqua	1	H.A.Whittem're	12	10	10	15	13	15	10	15	10				20	10	10		12		20	40	
417	Ontario	6	E. A. McKay	12	13	20	18	8	5	10	10	10		7	10	10		12	18			18	20	
418	Saratoga	1	J. C. Rouse		11		10	12						10	10	12		10	11	12			10	
419	Onondaga	8	D. G. Newell	13	12		10							7	11							15		
420	Queens	*m*	Farmer's Club	10	10	11	12				10	10		12	12	10	10	12	10	6		15		
421	Essex	1	Jos. E. Smith	10	10	16	30	8	10					10	15	8	10	15	20	10		15		
422	Suffolk	5	Watson Wilson	10	15	30	10	10	35	10	20	30		30	7	20	10	15	10	20	10	20		
423	Wyoming	4	D. T. Griffin	8	7	13	8	10								10		11	12	9				
	PENN.																							
451	Franklin	17	John F. Clayton	10	11	10	11								9	9	8	10	10	9		6	8	
452	Franklin	17	Jas. F. Clayton	7	12	11	15								6	8	5	10	10	11		14	12	
453	Bradford	1	E. B. Barns	11	13	12	14	8	9						18			9				15	50	
454	Snyder	1	F. Weirick	7			12											12				15	20	
455	Franklin	1	O. S. Brown	7	10	15	20								5	20	10	5	10	10		20	20	
456	Fayette	9	F. Ogievee	10	10	10	20	15	25	10	10	10		8	8	5		10	10	10		30	30	
457	Dauphin	2	D. Brightbill	9	11	15	15				10	15		10	15	12	10	10	10	10	10	15	20	
458	Franklin	26	J. Sharpe Nixon	5	11	12	13				9	10		10	15	7		10	15			20	20	
459	Perry	6	Alex. Kauffman	7	13	20	15				10	11		5	10	12	15	10	15	12		15	5	
460	Montgomery	6	J. C. Boorse	5	10	12	15							14	15			10	20				15	
461	Lancaster	1	Cyrus Brinton	10	10	12	9											10	12			20	20	
462	Lancaster	1	Jacob M. Seltz	8	10		12								10		8	10	12	14	15	30	100	
463	Cambria	1	John Lloyd	7	10	12	12	10	10					10	10	10		10	12	8			300	300
464	Fulton	21	John Hoke	18	15	15								10	15							15	15	
465	Delaware	4	Chas. G. Ogden	12	12	12					8	10				10		10	12	8		100	20	
466	Franklin	5	O. H. Anderson	8	10	10	15				10	10		4	7	10	7	10	10			30	20	
467	Blair	5	S. B. Replogle	6	11	12	15							10		7	8							
468	Centre	1	D. G. Klein	10	10	10	12				10			10	10			10	10				10	
469	Butler	1	Finley Balph	7	12	15	12	20	50					6	10	10		10	8			15	20	
470	Montgomery	7	F. Ogievee	10	10	10	15							10	12	9		10	15			12		
471	Susquehanna	10	G. B. Slack	12	30	20	9	10	40					8	10									
472	Fayette	7	Jas. Robinson	8	15	10	20	8	15	5	10	10		6	8	10	5	10	6	10		50		
473	Washington	1	John Post	12	10	10	20				12	10		2	8	15	8	10	15	15		20	20	
474	Lancaster	6	H. Musselman	10	11	12	11				10	10		12	10	11		9	9			15	10	
475	Columbia	12	A. P. Young	8	11	13	12							8	12	10		10	9			10	20	
476	York	5	L. P. Harman	8	10	15	20				11	15		5	15	15	5	7	11	13		30	15	
477	Washington	1	Jos. M. Cleery	10	10	10	14	20	40		10	10		10	6	9	5	10	8			40	40	
478	Chester	1	A. V. Trimble	12	10	10	13				10	10		8		10	8	10	9	9		20	40	
	N. J.																							
501	Cape May	1	J. G. Leach		14	20	15	12	20	15	15	25		11	15	20	20	14	10	20	10			
502	Mercer	2	S. P. Nicholson		10	14	15							7	9	9	11	10	10	12		15	30	
503	Somerset	7	A. Fleming	5	10	10	18							10	10	7		10	12			15	20	
504	Hunterdon	2	D. J. Blackwell	8	10	10	15							10	15	9	9	10	10	8		12	50	
505	Mercer	1	Ira J. Blackwell	9	10	10	12				10	10	9	9	10	10	10	10	13	11	10	15	300	
506	Middlesex	5	J. G. Shultz		10	15	13				10	13		8	13	10		10	10	8		20	50	
507	Mercer	5	C. M. Norton	8	10	12	14							6	14	8	10	12	12	15		20	30	
508	Warren	10	C. O. Harris	10	13	11	12	30	20	10				10	12	10	10	12	10					
	MD.																							
526	Cecil	2	R. F. Rowland	6	12	10	12				10			6	10	13	8	10	5	11			10	
527	Cecil	2	R. F. Rowland	11	9	11	10				9			5	10	12	7	10	6	9			10	
528	Dorchester	1	Jonas Parker	5	9	11	12							5	10	12	10			8		15	15	
529	Allegany	7	T. E. Ogden	9	10	12	15							10	12	15		8	12	12	10	30	30	
530	Worcester	8	B. E. Smith	5	10	10	7				10	10		10	7	10	7			11	7	15	15	
	DEL.																							
551	Kent	11	T. B. Coursey	8	10	10	14				10	12				8	8	20	15	10		20	20	
	VA.																							
576	Wood	1	E. Meldahl	5	12	12	15				8	10				18	15	10	13	15		50	100	
577	Wood	1	J. E. Wharton	5	11	12	14				11	14	10			18	15	10	15			18	18	
	MAINE.																							
601	Waldo	1	Geo. E. Brackett	9														10	12			15		
602	Kennebec	1	R. M. Manson	6														10		10		12		
	N. H.																							
626	Cheshire	1	Geo. H. Gilbert	5	10	10		5	6	9						5	8	10	11			11		
627	Merrimac	11	J. W. Simonds	7	10	12		15	12							10								
	VT.																							
651	Bennington	1	Allen Benson	7				10	10					10		10		10	10	10		10		
652	Orange	1	J. R. Cleaveland	7												10	10					10		
653	Orange

Reports on Sorghum—Maple Sugar—Barley—Flax, etc.

With the preceding general reports, came estimates of several other crops, of which the following is a summary:

Sorghum.—We have compiled the reports from *Thirty* counties in the Western or Northwestern States, including three counties in Pennsylvania, from which the estimates indicate that the surface planted this year will be **2 3-4** times greater than for any previous year.

Maple Sugar.—The reports from Vermont, New-York, and Ohio, range from less than half, to four times the usual amount of maple sugar made this year. The *average* of all the reports indicate that the product has been one-fourth greater than usual, but there are too few figures to give an estimate for the whole country.

Barley.—Reports received from only 25 counties, in New-York and at the West. These indicate that an average of *one-fourth above* the usual crop, is being sown this year. A larger number of reports are needed, however, to make out a ratio for the whole country. We shall doubtless have this before the harvest season.

Flax.—A few reports from Flax-growing regions indicate a large sowing of this crop. In Cedar County, Iowa, Mr. May, reports a double surface. In Newton County, Ind., Mr. E. G. Smith, reports four times the usual surface. In Benton County, Ind., Mr. D. Campbell, reports five times the usual surface. In other localities the estimates range from one-fifth less to a double surface.

Other Crops.—We have other scattering reports on Peas, Beans, Hops, Onions, Sweet Potatoes, Tobacco, Grapes, etc., etc., but not enough to form any estimate for the country at large.

Average Price of Potatoes, Carrots and Rutabagas for Every Month in the Year Past.

A year ago, (p. 204,) Mr. Geo. W. Walker, Pier 30, East River, furnished an interesting table, showing the average price of potatoes for seven years past. We are now enabled to compile from his figures the following table, which has a still more practical value:

POTATOES PER BARREL.

	Mercers.	*Peach-blows.*	*Common kinds.*	*Carrots, pr. bbl.*	*Rutabaga turnips pr. bbl.*
April	$2 18¾	$1 81¾	$1 43¾	$.....	$.....
May	2 37½	2 18¾	1 81¾	1 87½	50
June	1 56¼	1 56¼	1 25	1 50	62
July	1 25 / 1 56¼*	1 12½	81¼ / 1 81¼*	none.	1 04*
August	1 62½	none.	1 43¾	1 87½*	68
Septem'r.	1 62½	1 50*	1 12½	1 50	75
October	1 43¾	1 25	1 06¼	1 00	88
Novem'r.	1 93¾	1 33	1 31¼	90	68
Decem'r	2 18¾	1 87½	1 50	82	82
January	2 37½	1 93¾	1 56¼	90	90
February	2 34	1 93¾	1 68¾	82	1 00
March	2 63	2 12	1 81¼	82	94
April				1 00	1 00

(*) Indicates appearance of new crop in market.

Owing to the stoppage of shipments of merchandise to ports south of the Delaware, and down the Mississippi River, large quantities of produce came from the West and some potatoes were sold as low as 50c. a bbl. in July.

Carrots and Turnips have been in good demand this year, the desiccating companies using large quantities to supply the army. They use about 500 bbls. a week, and have kept the market unusually steady for soup vegetables.

Market Review, Prices, etc.

AMERICAN AGRICULTURIST OFFICE, New-York, Monday Morning, May 19, 1862.

The condensed but very comprehensive tables, below, show at a glance the amount of the transactions in the flour and grain markets. It will be noted that there has been a large increase in the amount of receipts, as compared with the previous month, in every thing but Barley. The increased receipts of the principal articles, Flour, Wheat, and Corn, are very marked, particularly in Wheat, the receipts of which have reached 518,000 bushels during 25 business days, against only 107,370 for 26 days last month. The sales of Wheat, Flour, and Barley, have also been much larger. As compared with the same period last year, however, the transactions have been less this year, especially as regards wheat. This is mainly due to the later opening of the Canals, than usual. Tables 4 to 8, give interesting statistics of the condition of the grain trade at the principal Western inland ports. At Chicago, the receipts of Wheat and Corn have been smaller this year, while the stocks on hand, on the 12th of May, the date of our latest reports, are in marked excess.

....When our previous report closed, there was a sharp upward turn in prices, which promised to continue, and the advance went on for a few days, until nearly the highest figures of the year were reached, but another downward turn again occurred, which has continued until now, and holders of large stocks of breadstuffs are apparently almost panic stricken. The causes of this decline have been mainly the same as referred to last month, added to which has been the material advance in ocean freights. So high is the charge for ship room now, that there is little encouragement to exporters to purchase for foreign markets in their present depressed condition, except at very low rates. Perhaps as a just retribution for their course at the beginning of our war, and their manifest desire to see our country crippled and divided, England and France are now suffering financially even more than ourselves, from the effects of the war. Millions of their inhabitants who have hitherto lived by manufacturing American Cotton, are now out of employment, and unable to purchase the better class of breadstuffs, while the economy practised in this country very greatly depresses their sales of manufactured articles. Recently we have many rumors that England and France will attempt to interfere with the war here in order to obtain a supply of cotton. The foolishness of such a course would seem to be evident. Cotton will do them no good, if they can not sell their manufactures, which they will be unable to do if by "intervention" here they break up their trade with us. America is the largest, the principal market for English and French manufactures, but the least attempt to interfere with our domestic affairs would close our ports against them.—Now we send abroad, from the West, corn worth 10 to 15 cents a bushel there, for which the foreign consumer pays 80c. to 90c., owing to the cost of transportation. It will not require much foreign jealousy and interference to lead the people of this country to inquire whether it may not be quite as well to shut out imports by a prohibitory tariff, and do our own manufacturing at the west where food is plenty and cheap, and where coal and the raw materials—iron, cotton and wool—are at hand. We have, from principle, always been opposed to "protective" tariffs, but the present course of events strongly indicates the *practical* utility of consuming our agricultural products in manufactures at home, and thus save the great cost of transportation. But, except as the subject directly affects the agricultural interest of our country, we shall not open our columns to the discussion of tariffs.....So far as *present* rates are concerned, the immediate prospects of our farmers for high prices are not so favorable as we had hoped for, and as we fully expected to report at this date. The extremely favorable weather abroad, and the distress in the manufacturing districts, continue to depress the foreign breadstuff markets. The crop prospects in this country are on the whole very favorable. (See the extended reports given elsewhere in this paper.) The late opening of the Spring, has retarded Spring sowing and planting, but the effect of the weather upon Winter grain crops, and upon fruit, has been of the most satisfactory character. The very unusual absence of frost after warm weather finally set in, has been in the highest degree advantageous to crops. With no untoward weather hereafter, our next harvest will be one of the largest yet known, that is for Winter and Spring wheat, for grass, and for fruit.....Cotton advanced considerably, subsequent to our last report, but closes with a downward tendency.....Provisions have been quoted active, but at unsettled rates.....Hog products (pork, hams, bacon, and lard,) close at declining rates.....Beef, Butter, and Cheese, are firmly held; old Butter is scarce, among wholesale dealers.....Tobacco has recently been in good request at very full prices.....Wool has been more sought after, and holders have exhibited increased firmness.....Hay and Hops have been in fair demand at steady rates.. The transactions in other agricultural products have been on a moderate scale. The table of prices show the changes and the present rates.

CURRENT WHOLESALE PRICES.

	April 21.	May 19.
FLOUR—Super to Extra State	$4 55 @ 5 10	$4 35 @ 4 85
Superfine Western	4 50 @ 4 70	4 35 @ 4 45
Extra Western	4 80 @ 6 40	4 50 @ 6 75
Fancy to Extra Genesee	5 15 @ 6 40	4 90 @ 6 75
Super. to Extra Southern	4 80 @ 7 00	4 85 @ 6 75
RYE FLOUR—Fine and Super.	3 10 @ 4 25	3 10 @ 4 25
CORN MEAL	2 80 @ 3 15	2 80 @ 3 20
WHEAT—Canada White	1 35 @ 1 40	1 23 @ 1 33
Western White	1 35 @ 1 45	1 22 @ 1 37
All kinds of Red	1 10 @ 1 35	90 @ 1 15
CORN—Yellow	57 @ 58	*54 @ 56
White	60 @ 70	Nominal.
Mixed	58 @ 59½	49 @ 51½
OATS—Western	38 @ 39	39 @ 41
State	39 @ 40	41 @ 42
RYE	79 @ 82	75 @ 76
BARLEY	70 @ 1 00	68 @ 85
HAY, in bales, per 100 lbs	55 @ 70	65 @ 80
COTTON—Middlings, per lb	29½@ 30	27 @ 27½
RICE, per 100 lbs	6 00 @ 7 25	6 50 @ 7 50
HOPS, crop of 1861, per lb	12 @ 18	12 @ 18
FEATHERS, Live Geese, p. lb	34 @ 38	34 @ 38
SEED—Clover, per lb	7¾@ 8¼	Nominal.
Timothy, per bushel	1 75 @ 2 00	1 50 @ 1 75
SUGAR—Brown, per lb	6 @ 8¼	6¾@ 8¾
MOLASSES, New-Orleans, p. gl.	40 @ 45	40 @ 45
COFFEE—Rio, per lb	18 @ 21½	19 @ 22
TOBACCO—Kentucky, &c, p. lb	7½@ 18	7 @ 18
Seed Leaf, per lb	7 @ 25	7 @ 25
WOOL—Domestic fleece, p. lb	38 @ 53	38 @ 52
Domestic, pulled, per lb	32 @ 45	34 @ 46
TALLOW, per lb	8¾@ 8¾	8¾@ 9
OIL CAKE, per ton	34 00 @37 50	33 00 @37 50
PORK—Mess, per bbl	12 25 @12 50	12 37 @12 50
Prime, per bbl	10 00 @10 25	9 75 @10 00
BEEF—Plain mess	12 00 @12 37½	12 50 @13 50
LARD, in bbls., per lb	7½@ 8¾	7¾@ 8¾
BUTTER—Western, per lb	9 @ 14	11 @ 17
State, per lb	16 @ 20	10 @ 17
CHEESE	6½@ 9	6 @ 8½
Broom Corn—per lb	4 @ 6	5 @ 7
EGGS—Fresh, per dozen	12 @ 13	8 @ 10
POULTRY—Fowls, per lb	12 @ 14	9 @ 10
Ducks, per pair		50 @ 75
Geese, per pair		1 25 @ 1 50
Turkeys, per lb	10 @ 15	10 @ 12
Dried Apples, per lb	6 @ 6½	5 @ 6
Dried Peaches, per lb., peeled	18 @ 20	20 @ 25
Dried Raspberries, per lb	13 @ 14	16 @ 17
POTATOES—Mercers, p. bbl	2 50 @ 2 62	1 75 @ 2 50
Peachblows, per bbl	2 00 @ 2 12	1 88 @ 2 13
Nova Scotias—per bush	55 @ 60	55 @ 60
Bermuda—New, per bbl		5 25 @
Sweet Delaware, per bbl	3 00 @ 3 50	3 50 @ 4 00
ONIONS—Red, per bbl	1 62 @ 1 75	1 87 @ 2 00
Bermuda Onions, per lb		4½@ 5
TURNIPS—Rutabaga, per bbl	1 00 @	1 25 @
APPLES—Russet, per bbl		3 00 @ 3 50
RHUBARB, per 100 bunches		2 00 @ 4 00
ASPARAGUS, per doz. bunch		1 00 @ 2 00
LETTUCE, per dozen		25 @ 37
RADISHES, per 100 bunches		50 @ 1 00

1. TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th	871,000	518,000	390,000	53,000	101,000	176,000
26 days *last* m'th	248,650	107,370	368,000	49,650	116,000	143,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
25 days *this* month	411,000	698,000	1,306,000	154,000	98,000
26 days *last* month	305,800	399,000	1,307,000	138,000	235,000

2. *Comparison with same date last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1862	871,000	518,000	390,000	53,000	101,000	176,000
25 days 1861	334,000	1,122,000	755,000	19,850	93,000	317,000

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
25 days 1862	411,000	698,000	1,306,000	154,000	98,000
25 days 1861	424,000	2,399,000	1,555,000	73,450	84,750

3. *Exports from New-York, from Jan. 1 to May 15.*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1862	941,002	2,627,204	4,789,770	643,862	70	17,978
1861	848,385	4,415,825	3,651,063	46,081	1,000	43,024
1860	281,511	424,100	299,701	100	200	765

4. RECEIPTS AT CHICAGO, JAN. 1, TO MAY 12.

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1862	408,561	2,016,701	2,798,778	278,661	377,389	306,436
1861	419,223	2,434,321	4,209,631	109,930	282,178	217,557
1860	160,756	1,189,504	4,414,195	53,427	174,118	427,972

5. *Stock in store at Chicago, May 12.*

	Flour.	*Wheat.*	*Corn.*	*Oats.*
1862	66,030	1,094,356	2,099,047	
1861	44,056	504,139	1,155,620	566,229

6. RECEIPTS AT MILWAUKEE, JAN. 1, TO MAY 12.

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1862	144,318	2,208,888	83,763	20,370	46,917	69,703
1861	119,647	1,791,483	45,561	11,880	33,616	14,903

7. RECEIPTS AT DETROIT, JAN. 1, TO MAY 12.

	Flour.	*Wheat.*	*Corn.*
1862	140,435	843,119	186,978

8. RECEIPTS AT TOLEDO, JAN. 1. TO MAY 12.

	Flour.	*Wheat.*	*Corn.*
1862	293,893	651,137	868,804

N. Y. Live Stock Markets.

THE CATTLE MARKETS have been over-supplied, the past month, the average receipts being 4,469 per week, or a total of 3,600 head more than for the previous month. Graziers have been buying for Spring and Summer feeding, and Government agents have taken a few hundred each week for the Navy, and for shipping to southern ports. But with these aids it has been difficult to sell all the cattle, during this season of cheap shad and eggs, with a full supply of early fresh vegetables. At the last general market, May 15th, with 4,800 cattle on sale, prices ruled low. The best bullocks sold at 8c.@8½c. ₱ lb. estimated dressed weight; fair steers 7½c.; poor 6c.@7c.; with an average of 7¾c. for all sold, most of which were of good quality. Market dragging. The indications today are for a smaller supply and higher prices this week.

Veal Calves.—Receipts for the past month, number 9,300 per week, not including large numbers which are sold direct from the river barges. The market has been over-stocked each week and prices have ruled low at the pretty uniform rates of 5c. per lb. live weight for the best; 4c.@4½c. for good, and 2½c.@3½c. for poor; many young calves are sold by the head at $1 and less.

Sheep and Lambs.—Now that the fleeces are all taken off, receipts are on the increase, though still moderate. The average for a month past has been 5,817 per week. Sheep bring $3 to $5 per head, equivalent to 4c.@4¾c. ₱ lb. live weight, while Spring lambs of 55 to 65 lbs. live weight, sell at 7½c.@8c. ₱ lb., or $4@$5¼ each.

Live Hogs.—Receipts about the same as last month, or 11,997 per week, and prices ¼c. lower than 4 weeks ago, with a slow over-stocked market. Prime heavy corn-fed hogs are the only ones which sell readily. They are worth 3½c.@4¾c. ₱ lb. live weight, and still-fed hogs, 3½c.@3½c. Light and poor hogs, whether corn-fed or otherwise, can scarcely be sold at 2¾c.@3½c. ₱ lb.

The Weather, for most of the month past, has been favorable for farm operations, and the present prospects indicate a fruitful season, especially so for the tree fruits, which have thus far been less affected by frosts than during any previous Spring for several years past. The season is now about one week later than last year, but probably none the less favorable on that account, except so far as the late opening of the ground hindered getting in the earlier crops. The ground is rather dry under two weeks of warm sunshine, with scarcely rain enough to lay the dust, and at this date some are fearing an early drouth. OUR DAILY NOTES, condensed, read: *April* 19 to 22, rain storm, soaking the ground thoroughly (2¼ inches,)—23 to 27, clear, warm days; peach trees blooming in city yards—28, 29, cloudy, with light rain—30, clear, warm.——*May* 1, 2, heavy N. E. rain storm, flooding streams—3, 4, clear, warm—5, thunder shower P. M.—6, wind and showers, (Stuyvesant pear tree in bloom, 12 days later than last season)—7, wind and clouds—8 to 13, clear, fine growing weather; slight shower night of 13th, ground dry—14 to 16, mostly warm, clear weather; ground getting quite dry—19, cloudy, with light showers—20, cloudy—21, fine rain.

Rain Fall.—From the 15th of April, to the 15th of May, there were **3.95** inches of rain, the most of which fell on the 1st and 2d of May.

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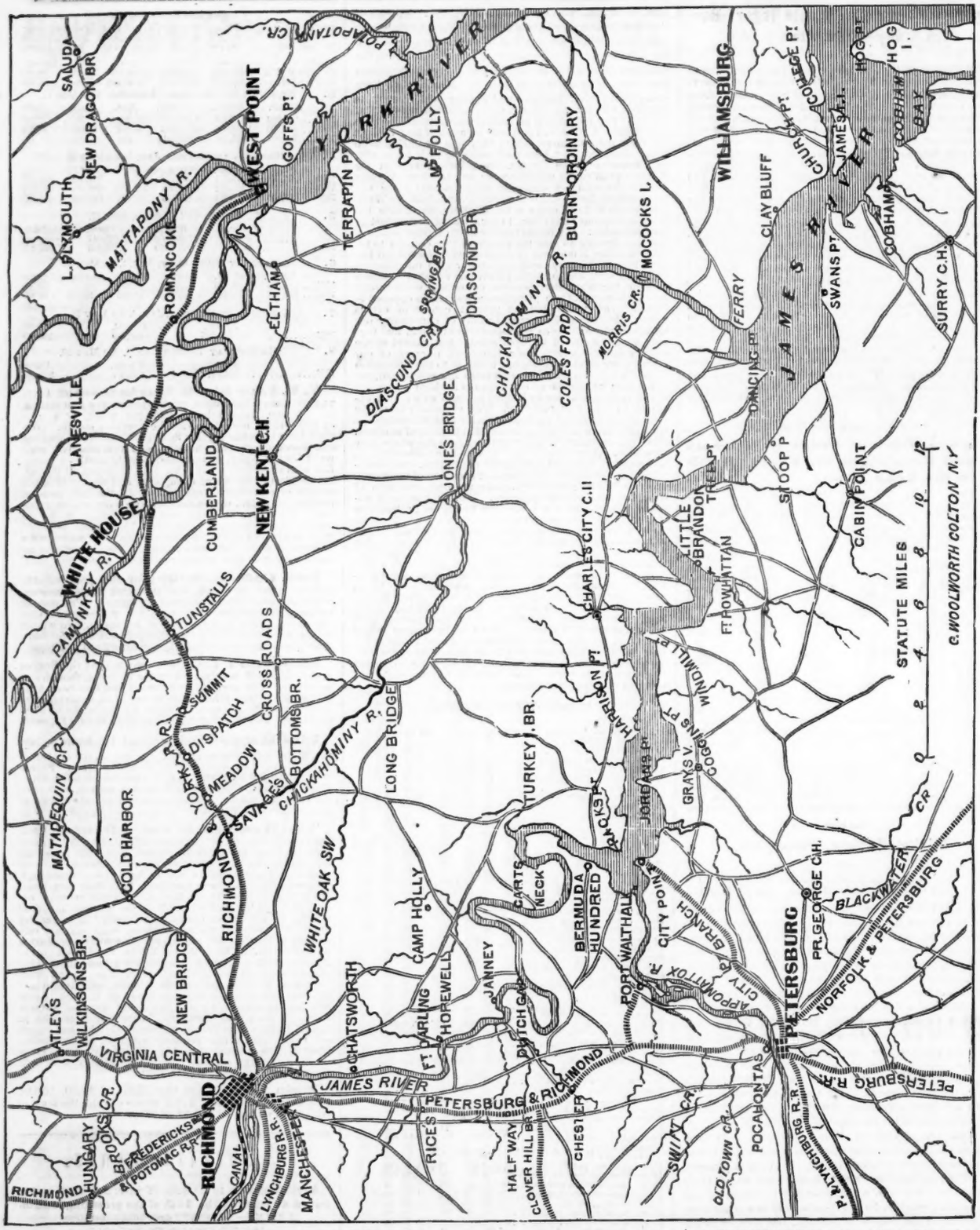

RICHMOND, Va., AND VICINITY.—The above accurate map, shows a section of great interest just now. It is on a scale of *five miles to the inch.* The Union forces, under General McClellan, are reported to-day, (May 21,) to have advanced towards Richmond, as far as the Chickahominy River, at Bottom's Bridge, New Bridge, etc. Fort Darling, on James River, 8 miles below Richmond, was reached by the Monitor and other gun-boats last week. Our map last month, showed the whole country from Richmond to Yorktown, Fortress Monroe, etc.

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American Weeds and Useful Plants*	1 50
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Fine Long Orange Carrot	per lb.	75c.	do. 10c.
Red Altringham do.	do.	75c.	do. 10c.
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Horticultural Pole or Speckled Cranberry Beans	p. qt.		25c.
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*N. J. Hybrid Cucumber (extra long variety)	do.		30c.
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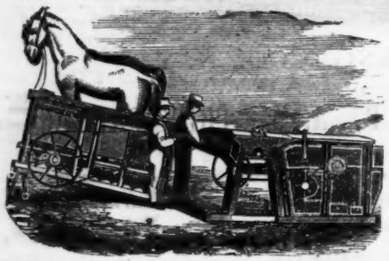

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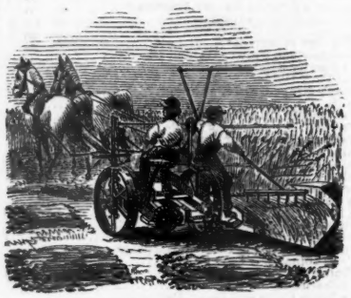

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Strawberry Show

AT THE

OFFICE OF THE AGRICULTURIST,

June 20th and 21st, 1862.

$50 IN PRIZES.

The Proprietor of the *Agriculturist* invites Strawberry Raisers, of this vicinity and elsewhere, to make an exhibition of their choice fruit on Friday and Saturday, June 20th and 21st, in the spacious Office of the *American Agriculturist*; and to give zest to the exhibition, offers the following

PRIZES:

For the largest number of most approved varieties, (one pint each)	$10
Second prize	5
Third prize	3
For the best dish of market berries, (two quarts of one variety—it will be very desirable to show plants with fruit, in addition)	5
For the best dish of the best berries for general cultivation, (two quarts one variety)	5
For second and third best	$3, $2
For the largest three berries of one variety, (weight and size both being considered)	3
For the best New Seedling	3
For the best quart of White Strawberries	2
For the best flavored Strawberries (one quart)	2
For the best quart Triomphe de Gand	1
For the best quart Wilson's Albany	1
For the best quart Hooker	1
For the best quart Hovey's Seedling	1
For the best quart Victoria	1
For the best quart Jenny Lind	1
For the best quart Vicomtesse Hericart de Thury	1

The berries to come in competition for the premiums must be upon the tables as early as 10 A. M.* on Friday, June 20th, and each specimen must be correctly labeled. The Awarding Committee will attend to their duties at 11 A. M.—at which hour the exhibition will open. When the premiums are awarded, the *names, places of residence* and of *business* of the exhibitors will be placed upon the specimens, and the prize samples properly designated.

It is particularly requested that persons intending to exhibit fruit announce, *if possible*, about the number of samples they intend to show, some days before hand, in order that we may provide suitable space for them.

The fruit will be subject to the order of the exhibitors at 5 P. M., Saturday, 21st, if they desire to remove it.

* Exhibitors living at a distance, whose fruit previously announced, can not arrive so as to be on the tables punctually at 10 o'clock, will be allowed a reasonable margin in the judgment of the committee.

An American Exhibition

OF

Pumpkins, Squashes, and Ornamental Gourds.

There will be a Public Exhibition of **Pumpkins, Squashes, and Ornamental Gourds,** at the office of the *American Agriculturist*, 41 Park Row, New York City, opening on Wednesday, Nov. 5th, 1862, at which the following prizes will be paid by the Publisher, upon the official award of competent Committees.

CASH PREMIUMS.

I.	For the *Heaviest* Pumpkin or Squash	$20.00
II.	For the 2nd do. do.	10.00
III.	For the 3d do. do.	5.00
IV.	For the Best do. do. for cooking	10.00
V.	For the 2nd Best do. do. do.	5.00
VI.	For the largest yield on a single Vine.*...	10.00
VII.	For the 2nd do. do. *..	5.00
VIII.	For the largest and finest collection of Fancy or Ornamental Gourds*	10.00
IX.	For the 2nd do. do. *....	5.00

* All to be grown by one person and to be accompanied by an affirmed statement from the grower, and two disinterested persons who assist in gathering the specimens.

Note 1.—The specimens receiving the Prizes will remain on Public Exhibition at the pleasure of the Publisher who offers the prizes. The other specimens will be subject to the order of the exhibitors, or they will be sold at Auction or otherwise disposed of, for their benefit.

Note 2.—All Exhibitors must notify us of their intentions by Oct. 10th, and deliver specimens for competition on or before Nov. 3d. Specimens to be delivered free of charge.

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We have complete sets of Vols. 16, 17, 18, 19, and 20, both unbound, and bound separately in neat covers with gilt lettered backs.

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EXTRA PREMIUMS,

For June and July, 1862.

STRAWBERRY PLANTS

Sent Free by Mail.

The Strawberry premiums offered previous to May 10th seemed to give general satisfaction. We sent out many thousands of plants to almost every part of the country, all of which, we trust, are growing finely. (The plants were growing too rapidly to be forwarded by mail *after* the advertised time, May 10, and a few sent after that date, to late applicants, perhaps did not reach them in so good order as if sent earlier.) In response to many requests, we continue the Strawberry Premiums, the plants to be sent out the latter part of August or the first of September, according to the season, and the locality for which they are designed. We are propagating plants in our grounds, and have engaged a supply from elsewhere. At present, we will only propose the **Triomphe de Gand,** and **Bartlett,** as hitherto offered; but should the present season develop superior qualities in other new varieties, an equivalent of the new selections will be given. A list of such sorts (perhaps several) as we can furnish will be published in the *August Agriculturist.* Plants set out in August, or early in September, will multiply somewhat this year, and bear next Spring.

CONDITIONS:

PREMIUM I. To any person forwarding, (*now* or before August 1st), ONE subscriber to the *American Agriculturist*, at $1 a-year, we will present (if desired) **Ten Plants** of the **Triomphe de Gand Strawberry,** or an equivalent selection from other sorts that we may have, to be forwarded free in August or September, according to their destination, as above stated.

PREMIUM II. For TWO subscribers, the same as Premium I, but **Twenty-five Plants,** or their equivalent, in other new choice varieties, instead of ten.

PREMIUM III. For THREE OR MORE subscribers, the same as Premium I, but **Fifteen Plants** or their equivalent in other varieties, for **each name.**

Premiums for Northern Grown Cotton.

One Hundred Dollars are offered for the best five specimens of cotton grown above latitudes 38° and 40°, this year. See particulars in February *Agriculturist*, page 64.

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